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**LIMITS TO ADOPTION: A COMPARATIVE STUDY OF
JAPANESE WORK SYSTEMS AND THEIR OPERATION
IN THE U.K.**

by

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DECLARATION

This is to declare that:

- I am responsible for the work submitted in this thesis.
 - This work has been written by me.
 - All verbatim extracts have been distinguished and the sources specifically acknowledged.
 - During the preparation of this thesis a number of papers were prepared as listed below. Remaining parts of the thesis, that is those excluding references three and four below, are unpublished.
1. Kubo, I. and A. Saka (2002). "An Inquiry into the Motivations of Knowledge Workers in the Japanese Financial Industry", **Journal of Knowledge Management**, 6(1), forthcoming.
 2. Kubo, I., Saka, A. and L. P. Shan (2001). "Behind the Scenes of Knowledge Sharing in a Japanese Bank", **Human Resource Development International**, 4(4), pp. 465-485.
 3. Saka, A. (2001). "Institutional Limits to the Internalisation of Work Systems: A Comparative Study of Three Japanese MNCs in the UK", **Warwick Business School Working Paper**, No. 344, University of Warwick, Coventry.
 4. Saka, A. and I. Kubo (2000), "Barriers to Organisational Knowledge Transfer: A Case Study of a Japanese MNC in UK", **Management Japan**, 33, pp. 1-14, <http://www.ijjnet.or.jp/imag>.
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ABSTRACT

This dissertation presents a multilevel comparative approach to investigating the degree to which Japanese knowledge-driven work systems are implemented and internalised in the UK business system. The focus is on processural and structural limits to accepting structural, cultural, control-related and technological practices of Japanese multinational corporations. The study addresses the national and local institutional, organisational and group levels in order to consider the contextual embeddedness of work systems. There is an interest in examining the interplay between the context and process of diffusion. Whitley's (1999) work on divergent capitalisms is furthered here by linking structures to micro-level social action in which they are implicated.

The study is based on qualitative case studies that systematically compare the ways in which Japanese knowledge-driven work systems are adopted in two UK subsidiary firms and an Aglo-Japanese technical collaboration. It draws on 73 semi-structured interviews conducted in the UK and Japan between August 1998 and April 2000, participant observation carried out in the subsidiary firms over one week and factory tours in Japan.

The study concludes that firms face a double barrier in the adoption of work systems in the form of, first, institutional embeddedness at the national level, and second, embeddedness of tacit work systems at the firm level. Nationally distinct social institutions show divergence in business systems across countries and local institutions point to divergence within a particular national business system. Organisational and group characteristics highlight the role of actors (management initiatives and interpretation of alternative work systems by adopters). The research findings suggest that firms attempt to locally interpret alternative work systems rather than submit to environmental pressures towards isomorphism. There is an enactment through social patterns of interaction in organisations, hence a variation in actors' response to similar practices and procedures diffused from highly institutionalised settings.

Keywords: historical neo-institutionalism, divergent capitalisms, embeddedness, diffusion of Japanese work systems, tacit and explicit knowledge, limits to internalisation, UK national business system.

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LIST OF ABBREVIATIONS

3S	Housekeeping principles consisting of sorting, straightening and standardising
5C	Housekeeping principles consisting of classifying, clarifying, cleanliness, clean-up and custom
ARG	Austin Rover Group
BAe	British Aerospace
BLMC	British Leyland Motor Corporation
BMC	British Motor Corporation
CAD	Computer Aided Design
CADAM	Computer Aided Design and Manufacturing
CAM	Computer Aided Manufacturing
DTI	Department of Trade and Industry
ECU	Electronic Control Unit
FDIs	Foreign Direct Investments
GCSE	General Certificate for Secondary Education
HR	Human Resource
HRM	Human Resource Management
IBB	Invest in Britain Bureau
IC	Integrated Circuit
IT	Information Technology
Japan.	Japanese
JIT	Just in Time
JVs	Joint ventures
LCD	Liquid Crystal Display
MD	Managing Director
Mfg	Manufacturing
Mgr	Manager
MNC	Multinational Corporation
NBS	National Business System

NIS	National Innovation Systems
NVQ	National Vocational Qualification
OA	Office Automation
OJT	On the job training
PCB	Printed Circuit Board
PCR	Project Change Requests
QC	Quality Control
QCI	Quality Control Initiative
R&D	Research and Development
RD&D	Research, Design and Development
SMED	Single Minute Exchange of Dies
SPC	Statistical Process Control
T. Coach	Team Coach
TQC	Total Quality Control
VP	Vice President

CHAPTER 1

INTRODUCTION

This thesis is concerned with the influence of national and local institutional variation on the internalisation of Japanese work systems in the UK automotive manufacture sector. In this introductory chapter the context of the study is discussed, and the research questions, which have guided the research process, are made explicit. The discussion on the significance of the research is followed by an outline of the research design and an overview of the general structure of the thesis.

1.1 Problem Statement

There is a growing body of literature on work systems diffusion (e.g. Richter and Vettel, 1995; Mowery *et al.*, 1996). Researchers have adopted a comparative research approach to work systems diffusion from a variety of angles such as the following: the labour process and the lean production perspectives within the Japanisation literature (e.g. Stewart, 1998; Womack *et al.*, 1990 respectively), the user-oriented perspective in the innovation processes literature (e.g. Scarbrough *et al.*, 1998); and the historical neo-institutional perspective within the neo-institutional literature (e.g. Whitley, 1999b, see Chapter 2). However, there are marked differences across these perspectives with regard to: (i) a processural or structural/technical focus, (ii) an intra-firm or inter-firm level of investigation, (iii) a reference to universal or embedded framework and (iv) the objective or context-dependent view of work systems diffusion (see chapter 2). This study adopts

the historical neo-institutional perspective to highlight the institutional limits to the diffusion of work systems across nations. Few attempts have been made to shed light upon the difficulties in implementing alternative work systems in cross-national settings. For instance, tools requiring human interaction can be more complex to diffuse to a new institutional setting, given their high tacit component (Lillrank, 1995). Although attention is paid to the influence of institutional characteristics on the extent to which work systems are diffused within the innovation processes literature (Swan *et al.*, 1999), this has not provided a systematic comparison of the context-bound nature of work systems diffusion. Moreover, work systems themselves are not considered as a key learning activity in the innovation processes literature. There has been limited attention to macro diffusion processes at an industry or a national level and the focus has been on internal processes of innovation design particularly within ‘knowledge-intensive’ firms. Although an investigation of both the structural components and processes of work systems diffusion in the manufacturing sector can benefit from the arguments drawn from the innovation processes literature, a more systematic approach to identifying structural and processural limits to diffusion as that provided by the neo-institutional theory is needed in the present study.

Research on work systems diffusion commonly adopts the objectified view of diffusion processes that reflects the interest in tangible characteristics such as structure and technical systems (see Chapter 2). This is illustrated by economic accounts of work systems diffusion within multinational operations (e.g. Marton, 1986; Prahalad and Hamel, 1990; Kogut and Zander, 1992; Bresman *et al.*, 1999). For example, Kogut and

Zander (1992) propose that multinational corporations economise on the costs of diffusing knowledge embedded in work systems through ‘a set of high-order organising principles’. There is an attempt in such studies to link knowledge to a performance outcome (e.g. Leonard-Barton, 1995; Makino and Delios, 1996; Buckley and Carter, 1999). In this sense, the firm is treated as a repository of capabilities or competence, and knowledge is seen as an objectified commodity (Winter, 1988; Barney, 1991; Fransman, 1994; Teece and Pisano, 1994, see Section 2.1.2 in Chapter 2). The social dimension of work systems diffusion, which is taken as situated or context-dependent in the present study, is ignored in the objectified view. The limits to the diffusion and embeddedness of work systems in institutional settings are not acknowledged. In contrast, there is a growing consensus among neo-institutionalists that the institutional environment is an important influential factor with regard to inter-organisational structures (e.g. Hollingsworth *et al.*, 1994). In other words, social institutions, such as the state or the public training system, can hinder or facilitate the diffusion of work systems (Whitley, 2000b). As will be explained in Chapter 2, the key social institutions that are seen as shaping capitalist systems, and, in turn, work systems or organisational practices, include the state, financial system, public training system, legal system, authority relations and union strength. Crucially, social institutions can constrain or promote the diffusibility of work systems across different countries. This debate is highlighted by the convergence versus divergence arguments in Chapter 2 (see sections 2.1.3.2 and 2.1.3.4.1). A systematic research into work systems diffusion, which incorporates the role of actors in internalising new practices by infusing them with values, can further macro-level explanations of the diffusion process. Although a number of comparative studies on this

subject have shown variation in the internalisation of work systems across different capitalist systems (e.g. Sako, 1992; Lane, 1996), evidence from these studies is confined to the macro level. The dynamics of how diffused work systems are shaped within the firm have received less attention. Clark's (1987) work on macro- to micro-level analysis of the way 'work templates' are appropriated is one of the few exceptions. Actions are seen as predetermined by institutional legacies in such comparative studies, and hence the role of management and the editing of alternative work systems by employees remain largely ignored. The diffusion of work systems embedded in institutional processes and organisational members' mental constructs and norms of conduct (Child and Rodrigues, 1994) can be constrained by the regularised patterns of human interaction in organisations. An attempt is made in this research to complement the national level discussions with the firm level by providing an analysis of the social patterns that shape the internalisation process. Both 'structure and flow' aspects of the diffusion process are addressed (Sorge (1996), see Chapter 2).

1.2 Objectives of the Research

This study investigates the structural and processural elements in the diffusion of work systems from Japanese multinational corporations (MNCs) to affiliate firms in the UK. Affiliate firms in this context represent UK subsidiary and collaborating firms of Japanese multinationals. Furthermore, work systems are defined here as organisational practices that are driven by people's knowledge, ideas and suggestions. They are, hence, labelled as knowledge-driven. They constitute work patterns that are "the product of over three decades of continuous improvement in Japan" (Cutter-Gershenfeld *et al.*,

1998:17).¹

The research focuses on the degree to which Japanese work systems are implemented and internalised within the UK business system (see Chapter 2). Japanese companies are seen as providing a diverse example of work systems that conform to institutionalised rules. The distinctive aspects of Japanese firms are based on the premise that dominant practices in relation to specific areas, such as work systems, reward systems, and employee governance, combine to form distinctive configurations that may be identified as a 'national business system' (Whitley (1996), see section 2.1.3.4.2 in Chapter 2).

The present study focuses on the degree to which strongly institutionalised Japanese work systems can be diffused to the UK context. There is an emphasis on the internalisation of Japanese work systems by employees rather than a mere replication of a source company's systems. The aim is to reflect the active process of internalising that goes with implementing work systems, as well as to highlight the structural limits to accepting alternative work systems. When knowledge-driven work systems are highly localised in character and acquired through engagement in specific action contexts, they can prove to be 'sticky' to diffuse to foreign firms (Szulanski, 1996). This is especially the case in Japan, where the activities of a 'highly co-ordinated' business system (Whitley, 1999b) are generally carried out in accordance with highly implicit rules and social norms. 'Compromise' (Sharpe, 1997), or 'hybrid' (Abo, 1994) solutions are common where Japanese belief systems, which are not readily compatible with those of the adopter firm,

¹ In other words, particular means of solving problems, carrying out tasks and arriving at decisions become institutionalised over time with the influence of past and present actions, beliefs and interests.

are diffused to 'foreign' contexts (e.g. Besser, 1996; Mair, 1998b). Work systems, in this study, are seen as embedded at two levels: in the form of institutional embeddedness at the national level and tacit embeddedness at the firm level (see Chapters 2 and 3). Embeddedness, which reflects behaviour that is aimed at sociability, approval, status and power, incorporates the impact of social structure and social relations on production, distribution or consumption (Granovetter, 1985). In this study, macro-level embeddedness addresses the nationally distinct characteristics of social institutions, such as legitimacy of Japanese and UK business systems, including structural characteristics of organisations and human resource management (HRM) systems. Micro-level embeddedness addresses the difficulty in the diffusion of work systems due to the tacit nature of Japanese knowledge-driven work systems (see Chapter 3).

This study specifically investigates the extent to which structural (shift to team structure), cultural (value and norms that constitute the philosophies which underlie the structural and technical elements of continuous improvement schemes such as emphasis on training), control-related (perceived exercise of power) and technological (advanced production systems technology that is needed for the efficient running of technical systems) practices are accepted and put to use by UK adopter firms. In order to do so, the nature of the influence of local institutional (such as location site and skills base of labour), organisational (such as company size and age, nature of diffused work systems) and group (such as attitude of teams towards alternative work systems) characteristics on work systems diffusion is examined. The institutional (such as business systems compatibility), organisational (such as organisational structure and culture) and group

levels (such as commitment by the adopting team) are addressed in an effort to consider the contextual embeddedness of work systems.

With regard to the aim of this study, the central question may be formulated as follows:

What is the impact of national and local institutional variation on the diffusion of knowledge-driven work systems in multinational corporations' internationalisation efforts?

This question can be subdivided into theoretical and empirical questions:

At the theoretical level:

- i. What are the key attributes of work systems diffusion?
- ii. Which characteristics at institutional, organisational and group levels are likely to have an impact on the diffusibility of work systems across nations?

At the empirical level:

- iii. Which characteristics are likely to either hinder or facilitate affiliate firms' adoption of multinational corporations' work systems?

The answers to questions (i) and (ii) are drawn from the literature and form the building blocks for the construction of an analytic schema. This schema guides the field study and the subsequent analysis involved in this research, which are intended to provide the empirical answer to question (iii). The answer to question (iii) forms the basis for addressing the central research question.

1.3 Significance of the Study

Empirical studies of the social constitution of work systems have been limited despite exceptions such as Sorge (1991) and Kristensen (1996). To date, research has tended to focus on technological (e.g. Marton, 1986; Jeremy, 1992) and/or structural characteristics (e.g. Littler, 1982; Womack *et al.*, 1990) of such systems. It is too common merely to look for pieces of the work system that one can benchmark and adopt. Rather, the overall approach to work and an integrated understanding or insight into these systems merit more attention in establishing similar systems overseas (Cutcher-Gershenfeld *et al.*, 1998). In the light of the current state of development of the literature, this study is aimed at explaining the influence of institutional peculiarities on the internalisation of Japanese work systems in the UK. The study incorporates a process-oriented perspective to look at the underlying reasons for the difficulties encountered in the diffusion of work systems from ‘strongly institutionalised’ contexts to those of ‘weaker institutionalisation’ (e.g. Inkpen and Dinur, 1998, see Chapter 3). It investigates not only power and governance (as do the advocates of the labour process perspective within the ‘Japanisation’ literature) and technological and structural contingencies (as do the advocates of the lean production perspective), but also the social dimension of work systems diffusion, such as the role of people in blending and redesigning work systems. In crude terms, this study examines not only structures, but also workers’ response to those structures.² It acknowledges the idea that employees are a vital component of work systems, based on the premise that “technology [cannot] be separated from the knowledge, skills and motivation of the workforce” (Cutcher-Gershenfeld *et al.*, 1998:viii).

At a firm level, the study addresses the need to explore the impact of tacit knowledge or experiential, practical knowledge that is embedded in habit, skills, routine, practices and/or teamwork (Polanyi, 1966) on the diffusibility of work systems. Tacit knowledge is increasingly seen as an important constituent of scientific and technological inputs to innovation (e.g. Pavitt, 1984; Dyer and Nobeoka, 2000). For instance, Pavitt (1984:343) contends that “most technological knowledge is not information that is generally applicable and easily reproducible, but specific to firms and applications, cumulative in development and varied among sectors in source and direction”. Furthermore, Senker (1995a:106) argues that

external sources contribute around one third of all knowledge used in innovation...Of the remaining two thirds which are obtained internally, half is knowledge which is personally held by company staff as a result of previous education and work experience, whilst the other half is generated mostly as a result of RD&D.

Senker acknowledges that tacit knowledge is an important element of the knowledge diffused through personal networks.

This research constitutes a multilevel, interdisciplinary study, drawing upon arguments from and contributing to both the historical neo-institutional perspective within the neo-institutional literature and the user-oriented view in the innovation processes literature. It exposes the historical neo-institutional perspective to the appropriation of knowledge at

² As Florida and Kenney's (1991) research suggests, examination of structures alone can easily lead one to conclude that the 'Japanese' model is successfully diffused to the foreign context.

the front-line of manufacturing or engineering operations within organisations. The study also incorporates a more processual discussion of work systems diffusion into the historical neo-institutional perspective, where the research focus tends to be at a macro level. As regards the user-oriented perspective in the innovation processes literature, this study extends the discussion on knowledge to a new empirical context—the shop floor of a car component manufacturer—away from widely-researched context of ‘knowledge-intensive’ firms. Attention to the internalisation of alternative work systems by factory operators has essentially been disregarded by researchers operating in the innovation processes literature. Rather, scholars have tended to limit their investigations to sector-specific knowledge diffusion processes in consultancies, software companies and innovation centres (e.g. Lahti and Beyerlein, 2000). Their focus has been on the process of technology development rather than on the process of diffusing organisational structures and processes, including HRM activities.

In addition, micro firm-level discussions of the appropriation of work systems in this study are supplemented by macro-level arguments of embeddedness of work systems in distinct institutional settings at the national level. The study addresses multiple levels (specifically institutional, organisational and group levels) in order to attain theoretical saturation³ and a robust explanation through comparative study, as well as to elicit the context-bound nature of arguments. Investigation of the diffusion of work systems may not be revealing unless it is carried out alongside an examination and comparative analysis of when and how the phenomenon occurs. The consequences for management and workforce in various groups, both within and across firms and nations, also need to

be considered. The multilevel approach is identified as a useful method for integrating macro- and micro-level constructs, for variables from multiple levels of analysis can influence the diffusion of work systems (e.g. Kostova, 1999).

Although the historical neo-institutional perspective adopted in this study addresses the historical context of work systems or path dependencies that provide a sense of mechanisms and limits to diffusion (see Section 2.1.3.4.1 in Chapter 2), it is not sensitive to possible divergence in the internalisation of work systems across different local institutions within the same national business system. Hence, the framework here is further refined by acknowledging the likely impact of local institutional characteristics, such as the location site of a firm, on the diffusion of alternative work systems. Few studies (e.g. Porter, 1990) have suggested the likely impact of national differences on the diffusion of technological innovation. However, these studies have been “inadequate in explaining the dynamics of innovation diffusion processes” due to their neo-classical approach to explaining different rates of adoption across nations (Swan *et al.*, 1999:906).

1.4 Research Design

This research adopts a comparative approach to investigating the ways in which Japanese work systems are adopted and sustained in affiliate firms of Japanese MNCs in the UK automotive manufacture sector. The process of diffusing work systems forms the central unit of analysis. From a methodological perspective, the study looks at underlying processes (e.g. Sharpe, 1999), not only structures (e.g. Abo, 1994). This enables ongoing

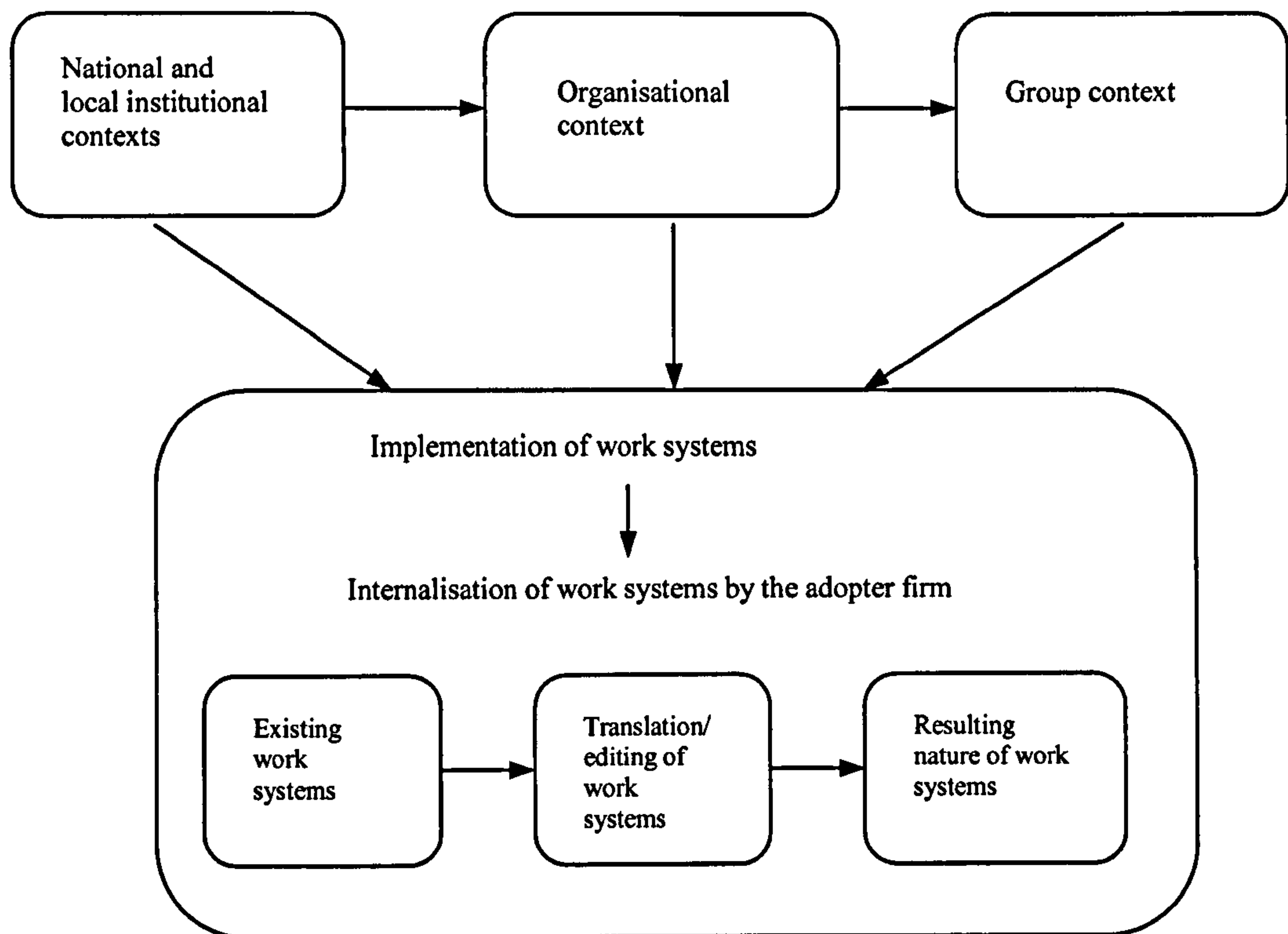
³ In other words, the national level differences in outcome can be supplemented by the firm level.

processes to be examined in a nonstatic manner. It is assumed here that an investigation of processes can reveal a set of meanings attached to work systems that is interwoven with structure and technology. The structural elements incorporate work systems that are infused with value. The challenge here is to understand both the structural aspects and the subjective meanings attached to them. Moreover, the diffusion process is largely investigated from the adopter company's perspective, as it is felt that "diffusion begins not with the sender but with what Rogers⁴ terms the adopter" (Cutcher-Gershenfeld *et al.*, 1998:42). However, it should be noted that the supply side of the diffusion process is not neutral and detached as is assumed by Rogers (Clark and Newell, 1993). As powerful parties, the supply side can influence decisions to hinder or facilitate the potential users' ability to use an innovation (*ibid.*, p. 70).

Qualitative case studies, which draw on semi-structured interviews, participant observation, factory tours and document analysis, are conducted in the UK subsidiary firms of Japanese MNCs (a brownfield and a greenfield site) and in an Anglo-Japanese technical collaboration.⁵ The aim here is to observe the degree to which institutional variation between Japan and the UK influences the internalisation of Japanese knowledge-driven work systems in the UK. The two countries involved in the study are seen as constituting contrasting institutional settings (Whitley, 1999b). The fundamental line of reasoning underlying this study is that institutional, organisational and group characteristics can hinder or facilitate the degree to which source company's work systems may be internalised by adopter firms (see Figure 1.1).

⁴ The authors refer to Rogers' (1983) work, entitled **Diffusion of Innovations**, third edition. New York: Free Press.

Figure 1.1 Schema for Diffusion of Work Systems⁶



Source: See text

In the schema in Figure 1.1, which will be further developed in Chapter 2, the implementation and internalisation of work systems (which are seen here as the components of the diffusion process) form the central unit of analysis. The degree of internalisation by employees at the adopter firms may be explained by linking it to the nature of institutional, organisational and group characteristics. The three-level characteristics that are considered particularly relevant in this respect are drawn from the literature and are labelled here as *key* characteristics.

Bearing in mind the aim of this study, the sampled cases need to contain detailed

⁵ The choice for the selection of this methodology will be detailed in Chapter 4.

descriptions of the extent to which work systems are diffused and the nature of social institutions at the national and local levels in the automotive manufacture sector. In this way, key institutional, organisational and group characteristics that can influence the degree of implementation and internalisation of alternative work systems may be identified (e.g. Whitley, 2000a).

The empirical setting of this study is the automotive manufacture sector. It represents an important industry from the standpoint of national competitiveness. The number of Japanese manufacturers in Europe increased by 16 during 1997 to a total of 859, with UK retaining its lead (247 manufacturers, 30 per cent of the EU total) over the rest of the EU. The UK also had the highest number of new investments during 1997. “There were 362 at end-1997, of which the UK hosted 127 (35 per cent), Germany 66 and France 50” (News and Notes section of Euro-Japanese Journal, 1999:59). It is claimed that “the adoption of the latest working practices [in the UK] has resulted in a revolution in manufacturing skills and performance” (Invest in Britain Bureau, 1999). Furthermore, the quality and productivity of the output from UK factories is said to rival the best in the world—including Japan—due to the diffusion of ‘lean’ manufacturing systems and a commitment to continuous improvement. The selection of the automotive manufacture sector allows one to investigate the possible limits to the adoption of Japanese work systems due to the heavy emphasis on the transfer of the ‘Japanese’ model to this sector. The number of Japanese investments is greater within the automotive sector than it is in other sectors, such as semiconductors; chemical, plastic, pharmaceutical and health-care;

⁶ The flows in this schema should not be seen as uni-directional.

textile and apparel; and food and drinks⁷ (see Table 1.1). Hence, these companies serve as more influential players in the host country's economic performance than those in areas of lower investment. The influence they exert in diffusing work systems to the UK can be more easily observed. There is also the argument that innovative activities are concentrated in most countries in relatively few firms, which make particularly significant contributions within the chemical, electrical and electronic, aerospace and automobile sectors (Pavitt, 1991). The MNC, in this context, is seen as an important social institution that acts as a decisive world-wide vehicle for technological innovation and its diffusion. Its catalytic role in the growing density of cross-border linkages among nations and firms makes it one of the major agents for organisational change (Ghoshal and Westney, 1993).

Table 1.1 Japanese Foreign Direct Investment in the UK by Product Category

Sector	Number of Companies
Semiconductors related industry	4 (2%)
Automobile and automobile parts	35 (15%)
Machinery and engineering	34 (14.5%)
Chemical, plastics, pharmaceutical & health-care	27 (11.5%)
Textiles and apparel	17 (7%)
Food and drinks	8 (3%)
Electrical and precision, machinery, OA equipment, information and communication industry and components	93 (40%)
Others	16 (7%)
Total	234

Source: Invest in Britain Bureau (1995)

⁷ However, the number of companies in the automotive sector is fewer than that in the combined category of electrical & precision, machinery, Office Automation (OA) Equipment, information & communication

Although the literature on Japanisation provides an extensive study of the automotive sector, it does not sufficiently explain the social process of work systems diffusion and the way artefacts are understood by human actors. Whilst the study of patterns of knowing as a dynamic activity is better addressed by the innovation processes literature, a majority of this body of work do not address the impact of macro institutional structures on work systems diffusion at a sector or an industry level, but rather focuses on human or technical processes underlying technology diffusion at a project or a national level (e.g. Clark, 1987). The present research emphasises the diffusion of knowledge-driven work systems within *production-related operations*. It adopts the historical neo-institutional perspective to link characteristics of work systems to path dependencies within particular institutional settings.

1.5 Organisation of the Thesis

This thesis consists of seven chapters. Following the introductory chapter, Chapter 2 provides a closer examination of the concepts of work systems, work systems diffusion and their embeddedness at the national and firm levels. The thesis is positioned with respect to different perspectives on comparative research approaches to work systems diffusion, specifically the labour process and ‘lean production’ perspectives within the ‘Japanisation’ literature, the user-oriented perspective within the innovation processes literature and the historical neo-institutional perspective grounded in the neo-institutional literature. The institutional embeddedness of actors is discussed with particular emphasis on Whitley’s divergent capitalisms argument within the historical neo-institutional

industry and components.

perspective. Further in Chapter 2, an analytic framework is provided in order to systematically compare the process of work systems diffusion across three affiliate firms of Japanese MNCs in the UK. The likely influence of potential key institutional, organisational and group characteristics on the diffusion of work systems is outlined. This is followed in Chapter 3 by a discussion of the application of the analytic framework with references to the diversity of the capitalist systems and the emphasis on different types of knowledge in Japan and the UK. This discussion is reflected in five propositions. Chapter 4 presents the methodological aspects of the empirical study. The case studies conducted in the UK affiliate firms of Japanese multinationals in the automotive sector are detailed in Chapter 5. In Chapter 6, the results of the case studies are presented and the institutional limits to the diffusion of work systems are discussed. The resulting insights serve as inputs for the systematic analysis of work systems diffusion across the greenfield and brownfield subsidiary and the technical collaboration sites. Furthermore, the results of the analysis are compared with the analytic framework developed in Chapter 2 and the propositions formulated in Chapter 3. Finally, in Chapter 7, study outcomes are used to provide answers to the central research question, and the theoretical and practical implications of the research findings are discussed.

CHAPTER 2

WORK SYSTEMS DIFFUSION: NEO-INSTITUTIONAL PERSPECTIVES

This chapter provides a review of the concepts of work systems and work systems diffusion. Work systems are seen as embedded at two levels: in the form of, first, institutional embeddedness at the national level, and second, tacit embeddedness at the firm level. The chapter provides a working definition of the diffusion of work systems at the firm level with reference to the view of work systems as knowledge-driven. This is supplemented by a review of comparative research approaches to work systems diffusion. These are specifically perspectives in the ‘Japanisation’, innovation processes and neo-institutional literatures. The four major perspectives on work systems diffusion are reviewed in an attempt to situate the framework used within an appropriate theoretical perspective. On the basis of this review, the neo-institutional arguments on the diffusion of work systems are identified as providing the most appropriate conceptual foundation for the construction of an analytic framework. Two different perspectives within the neo-institutional literature (the rational-choice and historical neo-institutional perspectives) are highlighted. The neo-institutional framework is further developed by strengthening it with concepts from the innovation processes literature. An analytic framework is constructed to offer a set of concepts that help to answer the following two questions. First, what are the key attributes of work systems? Second, what characteristics at the local institutional, organisational and group levels are likely to have an impact on the diffusion of work systems across nations?

2.1 Diffusion of Work Systems

2.1.1 *A Working Definition of Work Systems*

According to Whitley (1999c), work systems are distinctive inter-related patterns of task organisation and control, workplace relations between social groups and employment practices and policies. In this study, there is a focus on work systems that are essentially organisational practices, which are dependent on continuous improvement in operations. The study highlights work systems as driven by people's knowledge, ideas and suggestions and as "premised on harnessing the knowledge at the point where products are made or services are delivered" (Cutcher-Gershenfeld *et al.*, 1998: 69). Bearing this definition in mind, work systems are referred to here as knowledge-driven. It is not the purpose of this study to draw an analytic distinction between work systems that are knowledge-driven and those that are not. On the contrary, the study aims to acknowledge the knowledge-driven nature of all work systems. Nonetheless, it should be noted that tacit work systems, as those emphasised by Japanese firms, are argued here as driven by people's knowledge, ideas and suggestions to a greater degree than explicit or decontextualised work systems, as those reflected by Anglo-Saxon operations (see Chapter 3 for further discussion).

This study aims to examine the introduction of alternative work systems across cultures, and sees these as a key to global business strategy. Although the diffusion of knowledge-driven work systems can be investigated in any empirical context⁸, the focus in this study is on knowledge diffusion on the shop floor and in an engineering project. The basic

⁸ After all, as Blackler (1995:1026) contends, "*all* individuals and *all* organisations, not just so-called

premise is that knowledge diffusion occurs with equal importance on the shop floor and in engineering projects as it does in R&D centres and knowledge-intensive firms such as software development and consultancy firms. Hence, the capabilities of 'ordinary' factories and engineering firms are seen in terms of 'knowledge works' (Fruin, 1997) in this study. Prusak (1997) notes that as products are increasingly 'smart', production processes need to process higher levels of information about changing customer requirements, and delivery times. Hence, knowledge production and diffusion apply right across the board.

Discussions on the diffusion of work systems within the manufacturing context have commonly centred on structural and technical issues such as the cost and quality advantages of reduced inventory and efficiency gains from concurrent engineering.⁹ The definition adopted here diverges from privileging organisational structures and technological systems as the driving forces of work systems diffusion. Rather, it emphasises the importance of intangible aspects, in addition to acknowledging the tangible. Hence, this study adopts a more processural view on the diffusion of work systems. Cutcher-Gershenfeld *et al.* (1998:10) argue that the diffusion of intangible capabilities, much more than the tangible work practices or technical/structural systems, represents the key source of competitive advantage. Such diffusion marks the importance given to people at all levels of the organisation who must combine "the mastery of some highly specialised technical expertise with the ability to work effectively in teams, form

'knowledge workers' or 'knowledge organisations', are knowledgeable".

⁹ The concept of 'diffusion of work systems' is used intentionally here to suggest that there is more of knowledge sharing within a firm than a transfer based on a functionalist communication model across firms. This will be further discussed in Section 2.2.1.4.

productive relationships with clients and critically reflect on and then change their own organisational practices” (Argyris, 1991:100).

The definition of work systems as knowledge-driven reflects a socio-technical perspective in which human interaction at all levels of the firm is seen as being as vital as technology itself. In addition to acknowledging the technical and structural aspects of work systems, this definition pays allegiance to human beings as actively discovering problems and creating knowledge to solve them (e.g. Takeuchi, 1998). Hence, work systems are envisaged as incorporating the management of people. There is an acknowledgement of the importance of structural characteristics, such as company size (e.g. Damanpour, 1991) and processes, such as internal communication (e.g. Aiken and Hage, 1971) in the diffusion of work systems. Bird *et al.* (1999) assert that the importance of the human factor in the value-added activities of the firm rises as national barriers to the flow of capital and technology fall. The importance of an effective management of human resources is recognised especially in the context of Japanese firms, which are seen as relying more extensively on people-oriented work systems as a means of achieving competitive advantage (Abo, 1994).

2.1.2 Objectified and Context-dependent Views of Work Systems Diffusion

The traditional view of work systems diffusion reflects the interest in structure and technology where tangible characteristics are taken as the primary sources of competitive advantage. However, a complex set of meanings attached to work systems urges one to investigate the ways in which structure and technology are interwoven in organisational

practice. At one extreme, that is in part reflected by the Information Technology- and Knowledge Management-driven arguments, researchers have argued for technological determinism within a contingency framework. In other words, particular kinds of technology are proposed to yield certain predictable outcomes (Womack *et al.*, 1990). This extreme constitutes the more linear, mechanistic view of diffusion, where work systems (with an emphasis on explicit features) are seen as imported from or adopted out of a 'foreign' context in a unitary fashion. In other words, work systems are 'black-boxed' as technological artefacts and 'transferred'. This stream of research reflects Wolfe's (1994) category of 'organisational innovativeness' in his review of the innovation literature. He argues that there is a tendency to focus on the structural variables as the primary determinants of innovation. This static orientation ignores "changes in an innovation during the innovation process" (ibid., p. 409).

Studies have been carried out outside the manufacturing setting on work systems diffusion in high-tech firms, such as software development (e.g. Lahti and Beyerlein, 2000), labelled as 'knowledge-intensive firms' (Tampoe, 1993). This is mainly derived from the association of knowledge with technology, where technology diffusion is seen as synonymous with knowledge diffusion (e.g. Lynskey, 1999). Other researchers have challenged the dichotomy between technology and people. They have addressed the "sharp decrease in attention to people management and development issues, and step increase in attention to information technology (IT), information systems (IS) and intellectual capital" (Swan, 1999:4), seeing technological and structural characteristics of work systems as embedded in a social set of norms and beliefs (Thomas, 1994). The

importance of their view is reflected in part by the process theory research on organisation innovation (Wolfe, 1994). This research investigates “the nature of the innovation process, how and why innovations emerge, develop, grow and (perhaps) terminate” (ibid., p. 409). In brief, of the two perspectives, one emphasises the technical aspects of work systems and regards the diffusion of knowledge-driven work systems as objectified, and the other focuses on the social aspects and sees the diffusion of knowledge-driven work systems as context-dependent.

The two perspectives emphasise different aspects of the knowledge creation and diffusion process. The perspective that pays heed to the context-dependent nature of knowledge-driven work systems diffusion emphasises “culture management and leadership as a means for encouraging both socialisation, so that tacit knowledge is shared, and also internalisation of explicit knowledge into the values and tacit understandings of employees” (Scarbrough *et al.*, 1998:39). This perspective reflects the sedimented mode of knowledge communication “where knowledge is communicated via rules, standards, routines and structures” (Scarbrough, 1995:999). Actors can develop strategies that involve the progressive de-limiting and fixing of social relations. The meaning of alternative work systems becomes progressively stabilised as users and producers come to share common frameworks as to the meaning, critical features and purpose of the diffused systems. The context-dependent view of work systems diffusion focuses on “knowledge communication through professionalism and an intensively cultivated employment relationship which [seeks] to bind individuals tightly to the organisation” (ibid., p. 1012). This view acknowledges the stickiness of knowledge-driven work

systems and, in turn, the limitations to diffusion across different institutional contexts. (This is discussed in further detail in Section 3.1, Chapter 3). In contrast, the objectified view of knowledge-driven work systems diffusion implies that practices can easily be transplanted in a new institutional setting. The diffusion process is generally analysed through broadcasting analogies. Scarbrough (1995) refers to this process as communicating knowledge through objectification or universal applicability through standardisation. This process requires that technical knowledge be separated from its social context by standardisation and segmentation.

The present research builds on the perspective that takes into account the context-sensitive nature of knowledge-driven work systems. It attempts to provide insights into the social constitution of work systems, by giving attention to the interrelated aspects of technical and structural systems (i.e. largely the tangibles), and people, training, discipline, management-worker relations and social networks (i.e. largely the intangibles) in a process. Work systems are seen as embedded in a wider social context. For example, the quality circle in Japan is embedded in a set of cultural assumptions about hands-on-management and employment security, as well as internal labour market structure. Interactions of multiple actors shape the diffusion of work systems. In the words of Cutcher-Gershenfeld *et al.* (1998:11), the diffusion of work systems is seen as “a highly complex, negotiated process put into operation in a diverse range of communities and workforces”.

Knowledge-driven work systems, rooted as they are in firms’ co-ordination mechanisms

and organisational routines, exist in tacit and explicit form (Polanyi, 1966; Senker, 1995b). They incorporate the cognitive dimension, that is beliefs, perceptions, ideals, values, emotions and mental models that are taken for granted (Takeuchi, 1998). Particular means of solving problems, carrying out tasks and arriving at decisions become institutionalised over time with the influence of past and present actions, beliefs and interests (Clark and Mueller, 1994). This has implications for a firm's ability to create core organisational capabilities that rest on a combination of, what Araujo (1998:320) calls, migratory 'lower-level' skills and 'higher-order' (i.e. less diffusible) routines.

The complementary tacit and explicit forms of work systems are not sharply divided. "While tacit knowledge can be possessed by itself, explicit knowledge must rely on being tacitly understood and applied. Hence, "all knowledge is either tacit or rooted in tacit knowledge" (Polanyi, 1966:144). Tacit work systems are taken to reflect organisational routines that have been standardised over time to assume a taken-for-granted, subconscious nature (Kostova, 1999). In other words, tacit knowledge is taken as experiential, practical knowledge that is embedded in habit, skills, routine, practices and/or teamwork (Polanyi, 1966). It is believed to be effectively diffused through personnel transfers and visits (Inkpen and Dinur, 1998; Bresman *et al.*, 1999). It is operationalised here as the *intangible* foundation of continuous improvement schemes. On the other hand, explicit knowledge is defined independently of a particular individual or a group, and is regarded as being transmitted by "book, blueprint or statement to everyone on equal terms" (Best, 1990:127). It is operationalised in this study as the *tangible* foundation of continuous improvement schemes. For example, technology and

structure as tangibles in a given process are generally abstracted from their contexts to reflect explicit forms of knowledge.

The distinction between tacit and explicit forms may also be observed in the classification of scientific and practical knowledge of 'time and place' (Hayek, 1945), 'objective and experiential' knowledge (Penrose, 1959), 'migratory and embedded' knowledge (Badaracco, 1991), and 'idiosyncratic and codified' knowledge (Lanzara and Patriotta, 2000). This distinction is reflected in some of the definitions of information, which is associated with explicit knowledge, and know-how, which is related to tacit knowledge. For example, information is defined by Dyer and Nobeoka (2000:348, brackets added) as "easily codifiable [or explicit] knowledge that can be transmitted without loss of integrity once the syntactical rules required for deciphering it are known...by comparison, know-how [or tacit knowledge] involves knowledge that is tacit, 'sticky', complex, and difficult to codify". Consequently, knowledge ingrained in highly tacit work systems can prove to be 'sticky' (Szulanski, 1996) to diffuse to 'foreign' firms. Such knowledge can lack the tacit embedding context of its home country. More often than not "what makes sense in one context can change or even lose its meaning when communicated to people in a different context" (Takeuchi, 1998:8).

The distinction between tacit and explicit knowledge has been a focus of debate (e.g. Blackler, 1995; Tsoukas, 1996). Critics of this distinction argue that organisations are being portrayed as rich depositories of untapped knowledge which can be profitably exploited (Marshall and Sapsed, 2000). In line with Polanyi's (1966) argument, Tsoukas

(1996) regards tacit and explicit knowledge as mutually constituted, rather than as two separate types of knowledge. He (ibid., p 22) contends that “a firm’s knowledge is distributed in the sense that it is inherently indeterminate”. Similarly, Blackler (1995:1032) argues that “knowledge is multifaceted and complex, being both situated and abstract, implicit and explicit, distributed and individual, physical and mental, developing and static, verbal and decoded”. Whilst acknowledging these debates, the present research, in line with other work (e.g. Nonaka and Takeuchi, 1995), makes a schematic distinction between tacit and explicit knowledge in order to frame and investigate the impact of the variation in the emphasis on different types of knowledge on the diffusion process. (The variation in emphasis is discussed in the context of Japanese and UK business systems in Chapter 3).

2.1.3 The Empirical Context: Comparative Research Approaches

As was explained in the introductory chapter, a comparative study of the degree to which Japanese work systems are implemented and internalised is carried out to examine the institutional, organisational and group characteristics that are likely to have an impact on the diffusion process.

Since the early 1980s, a number of approaches have emerged which allow the patterns observed in cross-national diffusion of work systems to be explained. These are, in particular the labour process view, which is broadly speaking a political as opposed to a technical perspective (Graham, 1993), and the lean production perspective within the

‘Japanisation’ literature, the user-oriented perspective within the innovation processes literature and the historical neo-institutional perspective within the neo-institutional literature. In the next sections, the key features of these perspectives, including the issues they focus on and the conceptual frameworks they offer, are discussed and compared in the light of the research aims. In this way, the most appropriate perspective can be identified as the basis for the construction of the analytic framework to be used in this research.

2.1.3.1 The Labour Process Perspective within the ‘Japanisation’ Literature

There is a growing body of literature (Morris, 1988; Oliver & Wilkinson, 1992; Stewart, 1998) addressing the issue of the diffusion of Japanese management systems through the globalisation of Japanese manufacturers. Discussions have focused on issues of work and employment relations, labour control and effort intensification by management. Within the labour process perspective on the diffusion of Japanese work systems, the focus has mainly been on power and dependency implications of the diffusion process (e.g. Briggs, 1988; Dickens and Savage, 1988; Oliver *et al.*, 1994; Skorstad, 1994; Danford, 1998; Delbridge, 1998). Workers are seen as detached from the means of production, and can access them only by selling their labour to others (Braverman, 1998). The purpose of diffusing foreign work systems becomes “the expansion of a unit of capital belonging to the employer, who is thus functioning as a capitalist” (ibid., p. 36). The Japanese work systems are seen as enabling management to enforce speedier methods and shortcuts to the manufacturing process in an attempt to dissociate the labour process from the skills of the workers. In other words, management prerogatives are celebrated to the detriment of

the workforce (Oliver and Wilkinson, 1992). Attention is drawn to the introduction of Japanese systems through a selection process conducted according to the criteria and templates held by those who enjoy access to it. According to Westney (1999:404), the criterion for diffusing Japanese knowledge-driven work systems in this political view is to maintain parental control, or to enhance the power of the dominant coalition. Fundamentally, this approach highlights governance and control mechanisms implicit in the diffusion of Japanese work systems. For example, Sewell and Wilkinson (1992) argue that Japanese management exercises a covert form of social control or ‘concertive control’, to use Barker’s (1993) words. ‘Concertive control’, as opposed to ‘bureaucratic rational control’, is seen as growing out of a “substantial consensus about values, high level co-ordination and a degree of self-management by members or workers in an organisation” (ibid., p. 408). This is achieved by giving employees the impression that they are empowered via quality circles and other team-based activities. Sewell and Wilkinson (1992:271) demonstrate that the “surveillance systems integral to JIT/TQM are deliberately designed such that discipline is established in a most efficient manner and the exercise of minute control is possible with a minimum of supervisors”. In Danford’s (1997:2) words, “new management techniques secure for management new levers of control over skill deployment, task distribution and overall worker effort rates”. Furthermore, Oliver and Wilkinson (1992) discuss the social and political consequences of diffusing Japanese manufacturing methods. Their conceptualisation of ‘Japanisation’ is based on Ackroyd *et al.*’s (1988) definition of the term. Ackroyd *et al.* (1988) distinguish between direct, mediated and permeated or full Japanisation in considering its implication for British industry. Direct Japanisation is taken to mean “the penetration of British

economy and industry by Japanese firms” (ibid., p.15). Deliberate or overt copying of Japanese policies or practices by British firms is referred to as mediated Japanisation. In other words, the impact of the adoption of Japanese practices is not seen as a straightforward copying process, given that the effects of the practices are mediated by British management (Ackroyd *et al.*, 1988).

Oliver and Wilkinson’s (1992) arguments give voice to the barriers that the adopter firm faces in its efforts to sustain worker-ownership of Japanese manufacturing techniques and philosophies. They also illustrate the selective character of any borrowing from Japan, where the given company seeks to adopt elements of the ‘Japanese’ model to match its circumstances. This results in the adoption of a “hybrid which is neither entirely Japanese management as practised in Japan nor typically British” (Wickens, 1987 in Guest, 1992:6; see also White and Trevor, 1983). The ‘selective’ importation of organisations based on teamwork and devolved responsibility, extensive and intensive communication and employee relations systems is seen as designed to safeguard managerial prerogatives. The investment in trust-building, openness in communication and visibility in management by the Japanese are taken as a means of minimising worker resistance and in increasing the acceptance of a new governance system. This indirect form of control is seen as associated with a low willingness on the part of the Japanese companies to learn from their overseas affiliates, where the Japanese are in strong bargaining position to establish ways of working they see as necessary (Smith and Elger, 1998). The Japanese firm’s selective utilisation of production practices that are identified with the ‘Japanese model’ (Taylor *et al.*, 1994:197) suggests that practices of strategic importance, such as

design work, remain in the Japanese headquarters. This ingrains the notion among critics that the Japanese managerial strategy in the host company is aimed at stripping labour out of production, controlling trade unions and undermining employee autonomy (Williams *et al.*, 1992).

2.1.3.2 The Lean Production Perspective within the 'Japanisation' Literature

The interest in the 'Japanisation' debate has also taken the form of a focus on the effect of new manufacturing initiatives, such as JIT, on the design of jobs. These represent attempts to link the introduction of 'new or lean production' methods to competitiveness. For example, Buckley and Carter (1999:80) claim that "gaining value from the intangible assets a firm possesses is a key component in achieving the strongest possible competitive stance". The diffusion of Japanese work systems is seen as a consequence of "deliberate organisational redesign (usually by managers) to accommodate conflicting pulls from local and imported patterns, to improve the internal fit within the organisation and fit with external environment and to improve organisation's performance" (Westney, 1999:402). This has led to debates on convergence of institutional systems that become uniform or isomorphic with the 'globalisation' of managerial structures and strategies. For example, US/UK firms in some industrial sectors are seen as converging towards the Japanese employment system (Lincoln and Kalleberg, 1985). The evolution in the internal organisation of firms towards what is claimed to be 'welfare corporatism' is assumed to over-ride 'market individualism' (*ibid.*). The changes made in business enterprises and regulatory institutions are said to be in the direction of restructuring of

mass production industry by adopting new technologies and new practices (Womack *et al.*, 1990). The focus in such arguments is on business and craft production as well as engineering, industrial relations and production restructuring—in brief flexible manufacturing systems—to meet the Japanese challenge.

During the 1960s, it was widely held that the diffusion of manufacturing technologies and divisions of labour at the societal level would eventually lead to convergence in institutional arrangements and economic performance (Hollingsworth and Boyer, 1997). However, despite economic integration of manufacturing markets, the harmonisation of the institutional variation across nations has not occurred (Sorge, 1991). It is commonly believed among advocates of the ‘lean production’ perspective (e.g. Kenney and Florida, 1993; MacDuffie, 1995) that there is an optimal solution for organising labour, raw materials and capital in the manufacture and distribution of goods, and for adopting organisational practices in the cross-national diffusion of work systems. There is an attempt to establish the optimum balance between cost reduction, retention of control and devolution of responsibility to the supply chain (e.g. Alford *et al.*, 2000).

Within this perspective, the focus has been primarily on the contingencies necessary for the successful diffusion of work systems. These contingencies are taken as ‘best practices’ in a module form that can be disassembled and transplanted to another context (Womack *et al.*, 1990; Bohn, 1994). Knowledge ingrained in portable ‘best practices’ is taken as a commodity that can be moved from one context to another. This view of knowledge is reflected by much of the research driven by rational-choice neo-

institutionalist ideas (which will be discussed in Section 2.1.3.4.1) whereby work systems are conceptualised as bearing structural characteristics (e.g. Littler, 1982) and/or technological characteristics (e.g. Marton, 1986; Jeremy, 1992) that serve as “actionable consulting packages and ‘how to’ books” (Lillrank, 1995:976). It is far too common to look simply for pieces of the work systems that one can benchmark and adopt. Although it is argued that “lean production proponents argue that this system successfully combines social and technical aspects of efficient manufacturing” (Delbridge, 1998:6), there is greater focus on diffusible explicit components of the system that provides a ‘universal model of best practice’ than on tacit components.

At the firm level, it is argued that “the greater the dependence of an organisation on another organisation, the more similar it will become to that organisation in structure, climate and behavioural focus” (DiMaggio and Powell, 1991:74). The advocates of the lean production perspective are less sympathetic to the notion that capitalist systems are diverse. It is assumed that work systems can be abstracted from the wider institutional context in which they are embedded (e.g. Womack *et al.*, 1990).¹⁰ According to Kenney and Florida (1993), the most successful firms use teams, quality control activities, rotation and egalitarian management styles. The ‘one-best-solution’ to organising resources in an attempt to access technology, know-how, managerial expertise, capital and international markets (Child and Faulkner, 1998) is based on the assumption that Japanese methods are universal and can be effectively applied to other contexts. This thinking is especially reflected in the early instances of adoption, characterised by the

¹⁰ Hence, the lean production perspective is also labelled as the technological/rational perspective by some (e.g. Oliver and Wilkinson, 1992).

diffusion of one or two particular management techniques, in isolation from the broader strategy and philosophy by UK management (Beale, 1994).

The ‘universalistic models’ in the ‘Japanisation’ literature emphasise on the ‘transfer’ of work systems that can be communicated between the sender (or the broadcaster) and the receiver in a form abstracted from the wider social networks. Although patterns of knowledge flow are examined across industries and countries within the universalistic accounts, the complex ensembles of routines that can mould what is being ‘communicated’ are ignored. Knowledge ingrained in work systems is, rather, understood as an object that can be created, packaged and diffused, more or less unchanged, from one context to another. Attention is given to immediate contingencies of a given transaction away from the scope for social action in shaping such a transaction (Scarbrough, 1995). The theoretical assumption is that key variables, such as structure and technology move without friction and in a linear fashion (Clark, 1987). However, such variables in reality are shaped by organisational culture and value systems, hence, are sensitive to contexts. The assumption that the variables move in a linear fashion implies that learning in this context occurs in a mimetic or a coercive way, and that ‘best practice’ is diffused through imitation.

2.1.3.3 The User-oriented Perspective within the Innovation Processes Literature

Research on innovation processes is also relevant for understanding the diffusion of work systems. This tends to adopt either a *supply-focused approach* (see Rogers’ 1983 work on

diffusion of innovations), or a *user-oriented perspective* (e.g. Clark *et al.*, 1992). The supply-focused model focuses on the ways in which suppliers may communicate new ideas to users in order to encourage adoption. As the focus in this model is on adoption, implementation problems tend to be ignored (Clark, 1987). There is an assumption here that work systems remain unmodified in their move through different sectors, units or nations. On the other hand, the user-oriented perspective considers plurality of actors, the role of social structures, unintended outcomes of power struggles and the problems with appropriating new work practices alongside existing practice and context. The user-oriented perspective thus assumes that innovations are “heterogeneous complexes rather than homogeneous entities” (Clark, 1987:60), hence their diffusion can be non-linear. This section focuses on the latter view as applied to work systems diffusion, given its closer fit with the aims of the present study.¹¹ Innovation in the user-oriented perspective is regarded as dependent on contextual features that are shaped by the societal context, leading to differences in implementation across contexts, including nations (Swan *et al.*, 1999). This view assumes that “potential users [of the diffused knowledge or innovation] are embedded in complex ensembles of routines which may inhibit or enable their ability to use an innovation” (Clark and Newell, 1993:70, brackets added). Hence, the limits to implementation, given the embeddedness of diffused knowledge, are addressed. Furthermore, cognitive and political dimensions of the process of knowledge diffusion are acknowledged. It is assumed that innovations are firm-specific and socially-constructed artefacts, hence can be shaped by the interests of suppliers and powerful users. This perspective acknowledges different forms of knowledge and patterns of

¹¹ Although this research does not focus on an innovation, arguments drawn from the studies on innovation processes can be enlightening from the point of view of work systems diffusion.

“knowing as a dynamic activity involving the continuous creation, reproduction, modification and destruction of streams of meaning” (Marshall and Sapsed, 2000:2). In other words, there is a stronger focus on agency. In contrast to the focus on structural and technical concerns of the orthodox view, there is a focus on active process involving “the formation, redesign and implementation of new ideas” in the process-based account (Hislop *et al.*, 1998:429). The intangible questions of culture, commitment, motivation, involvement and trust are seen just as important as technology and structure in the diffusion of knowledge in the user-oriented perspective (Scarbrough *et al.*, 1998). In spite of the strength of this perspective in explaining the process of work systems diffusion, there are limitations that the current study attempts to address. Some of the limitations are as follows:

- (i) There is limited attention to macro diffusion processes at an industry or a national level, with the exception of a handful of examples, such as Jeremy’s (1981 in Clark, 1987:162) work on the “transfer of British textile technology, technique and knowledge into the USA between 1790 and 1830”.
- (ii) The attention given to institutional characteristics, such as employment systems, organisational structures (Hedlund, 1994), and sector-specific labour markets (Lam, 2000) is scant.

An investigation of the diffusion of knowledge-driven work systems in the manufacturing sector can benefit from the arguments presented in the field of innovation related research. It can highlight the role of the adopter or user in the internalisation of ‘new’

work systems.

2.1.3.4 The Neo-institutional Literature

A multiplicity and diversity of neo-institutional arguments have had in common the questioning of conventional organisational theories. Conventional organisational theories rely on understanding organisations as essentially closed systems, working to a logic of efficiency, context-free rational agency and/or ‘one-best-way’ in organisational structuring and operating (Djelic, 1999). In contrast, the neo-institutional arguments emphasise on the “varied ways in which social groups [are] constituted inside and outside organisations and their continuous competition for control of resources” (Whitley, 1999c:12). There is a belief that the rules of the competitive game are socially constituted by different state structures and policies and institutionalised patterns of behaviour, and so differ significantly between institutional contexts. Emphasis is laid on “the shaping of recursive patterns of corporate or inter-firm behaviour by national institutions both in functionally significant areas of business such as education and training, finance etc. as well as upon underlying familial patterns of socialisation” (Loveridge and Mueller, 2000:221).

The diversity of neo-institutional arguments stems from different traditions, namely from economics, sociology and political science. Differences between these arguments mean that the definition of the term institutions adopted in each case also differs. Within the neo-institutional theory, there have been two broad schools of thought in comparative research—those who argue for isomorphism or convergence of social systems of

production (e.g. DiMaggio and Powell, 1991), and those who examine contextualities in industrial organisation and explain for the persistence or divergence of particular structural and cultural legacies across national boundaries (e.g. Loveridge, 1996; Streeck, 1996; Djelic, 1998). Those who examine the contextualities in industrial organisation address the gap in research where there is less developed body of research that examines the process of work systems diffusion in manufacturing settings beyond the technical and/or structural aspects of work systems as solutions to manufacturing settings' competitiveness. For instance, organisational theorists and strategists (e.g. Richter and Vettel, 1995; Appleyard, 1996) have acknowledged the strategic importance of the diffusion of organisational practices, but have given less importance to the institutional limits to such diffusions in terms of conflicting structural and cultural legacies and embeddedness of work systems in these legacies. "There is evidence to suggest that these transfers are not always smooth and successful" (Kostova, 1999:308). For example, there is much research that reports on the local adoption of 'Japanese' work systems. The resulting picture is far from a replica of a discrete set of these systems (e.g. Reitsperger, 1986; Elger and Smith, 1994; Mair, 1998b). As was discussed in Section 2.1.3.2, proponents of the lean production perspective fail to address the limits to adoption of alternative work systems. Although the present study does not disregard the positive implications of the diffusion of work systems such as, combination of technical skills for innovation, physical resources for economies-of-scale and efficiency and building of market capabilities for flexibility (e.g. Aiken and Hage, 1968; Bergquist *et al.*, 1995; Sierra, 1995; Child and Faulkner, 1998), it focuses on the limitations to diffusion as these have received limited attention.

The next section discusses two different typologies of neo-institutional outlook on work systems diffusion: rational-choice neo-institutionalism and historical neo-institutionalism. The barriers to the diffusion of knowledge-driven work systems are discussed within the second typology, that is historical neo-institutionalism.

2.1.3.4.1 Two Different Outlooks on Neo-institutionalism

The multiplicity of neo-institutional arguments can be broadly merged under the rational-choice and historical neo-institutional typologies.

Rational-choice neo-institutionalism

According to Djelic (1999), the rational-choice neo-institutionalism, or institutional economics, emerged as an anti-thesis of classical and behavioural theory in economics and political science. Within this perspective, the firm is seen as addressing the process of creating value and enhancing competitiveness through its ‘optimal’ combination of resources (e.g. Schumpeter, 1942; Richardson, 1960). There is a focus on the conditions facing firms in general, rather than the internal activities that contribute to the success of individual firms. Firms are seen as reactors to the environment. “The internal decision-making process is irrelevant, and the firm is treated as if it is a single entity, a single brain” (Rowlinson, 1997:14). In other words, the deterministic outlook on a firm’s nature and functioning does not take into account a firm’s ability to enact its environment. However, “gigantic multinational corporations can exercise an economic stranglehold backed by the political force of the country and the local capitalistic classes” (Worsley,

1982:13).

The rational-choice neo-institutionalism highlights the “plurality of governance and organisational structures [as being] reconciled with assumptions of rationality and efficiency” (Djelic, 1999:5). Different industries or specific market environments are seen as bearing different structural arrangements that are most efficient in a given context. Williamson’s (1985) assumptions of bounded rationality and logic of efficiency, as applied to institutionalism, drive the process of transformation in different contexts towards a particular equilibrium solution. There is an emphasis on statistics of equilibrium states rather than dynamics (Granovetter, 1985). In other words, there is an undersocialised conception of human action and the impact of social structure and social relations on production, distribution or consumption. However, institutions can be constrained by ongoing social relations. Loveridge (1996:2) contends that “institutional evolution is seen as an ongoing process, subject to prevailing demands of the evolving needs of the actors, rather than as the end point of an apparently linear trajectory”. As Granovetter (1985:504) argues, “most behaviour is closely embedded in networks of interpersonal relations”. Behaviour may be aimed not only at economic goals but also at sociability, approval, status and power. Such arguments contrast with the conventional efficiency arguments within the Rational Choice model in Economics, for rational-choice neo-institutionalists do not argue for a superior, universal model. Rather, they adopt a contingency approach to transaction cost economics in association with organisational structures (or contextual rationality). Actors, in this framework, are defined as bounded-rational with decontextualised goals. Granovetter (1985:481) notes that “much of the

utilitarian tradition, including classical and neo-classical economics, assumes rational, self-interested behaviour affected minimally by social relations, thus invoking an idealised state". Hence, there is limited appreciation of the role of strategic choice, beliefs and power. Behavioural characteristics, such as stakeholder relations and personnel motivations, are not emphasised, for the assumptions of perfect information and atomisation of actors do not necessitate strategy formulation incorporating stakeholder relationships and innovative capabilities with reference to institutional constraints on choices. Although social institutions matter in the rational-choice neo-institutional perspective, they are only seen as parameters in social actors' calculative decision. There is the assumption that decision-making is based on "solipsistically acting rational individuals" (Lane and Bachmann, 1997:231; Coleman, 1990), or, in Marini's (1992:21) terms, on purposive actors who "act in ways that tend to produce beneficial results" or maximise net return. The rational-choice neo-institutionalism is characterised by its "reconciliation of convergence with a plurality of solutions or models, each one of those being better fitted, or more efficient type of context or environment" (Djelic, 1999:4). This perspective is in alignment with the neo-contingency arguments whereby a range of factors or environmental characteristics are linked to rates of adoption and outcomes of implementing innovation processes. For example, (Porter, 1990) stresses the importance of nations that are "characterised by their peculiar capabilities within particular sectors in which they have developed a regional comparative advantage" (Loveridge, 1996:4). In contrast, historical neo-institutionalism (which is detailed in the following section) acknowledges goals, preferences of actors, their problem identification process and the historical contexts in which they are embedded. Managerial preferences, normative

patterns and political contingencies can affect patterns of growth (Penrose, 1959). Furthermore, decision-making can be influenced by the divergent interests of individuals within and outside the organisation (Brunsson, 1989). Historical neo-institutionalism rejects the very idea of convergence and argues for a multiplicity of models. It is assumed that organisational solutions are defined through a historical process where both path dependencies and unanticipated developments play a part (Djelic, 1999).

In the context of work systems diffusion, the rational-choice neo-institutionalist arguments tend to centre on the perception that actors can copy the practices of a particular institutional environment easily to another context (see discussion in Section 2.1.3.2).

Historical neo-institutionalism

The historical neo-institutional perspective enriches the classical approach to cross-national diffusion of knowledge-driven work systems, providing a sense of the mechanisms and limits to diffusion. It allows one to discuss the barriers to diffusion, a matter rarely treated in the literature. In contrast to conventional efficiency accounts, “historical variants of neo-institutionalism have generally set out to account for the peculiarities of a given national system of industrial production and for persistent structural differences across national boundaries” (Djelic, 1999:7).¹² Historical neo-institutionalism reflects the ‘societal effects’ (Sorge, 1991) approach to work systems

¹² Once institutionalised, governing rules tend to persist “because they become integrated with wider economic institutions and ways of thinking” (Dobbin, 1995:280).

diffusion, in that, nationally embedded differences across business systems are acknowledged in the process of diffusing alternative work systems. Within this perspective, national structural and cultural legacies are traced as a means of determining what makes a national system. Institutions are seen as comprising ‘constitutive and regulative rules or normative expectations’ that are, to a degree, taken for granted or internalised by a group of actors (Abell, 1995). They constitute “copying or mimetic action and learning by adaptation” (ibid., p. 11). In other words, institutions are transmitted mimetically in groups, resonating an evolutionary epistemology. Although advocates of this theory broadly agree that economic activity is embedded within a particular set of national institutional constraints, they differ in their focus on the constraining legacies. Some researchers (e.g. Tolbert and Zucker, 1983; March and Olsen, 1984; Hamilton and Biggart, 1988; Fligstein, 1990) emphasise on the structural aspects of institutions, investigating mainly the regulative carriers of institutions. Others have adopted a more sociological or cultural view, focusing on cognitive and normative carriers of institutions, that is values, expectations and belief systems (e.g. Whitley, 1992). In such a view, cultural mechanisms are taken to increase stability of the work environment and to facilitate the equitable mediation of transactions between parties under conditions that severely limit the capacity for rational control.¹³

Historical neo-institutionalism acknowledges the peculiarities of each national

¹³ Radical change is not incorporated into historical neo-institutionalism. Rather, this perspective acknowledges the possibility that historical accidents or unanticipated developments may occur with heavy reliance on path-dependent behaviour (Djelic, 1999). By the same token, Powell (1991:193) argues that “path-dependent models suggest that institutional arrangements are not likely to be flexible; they cannot change rapidly in response to perturbations in the environment”. Hence, the rational-choice neo-institutional assumption of reacting to, rather than enacting, the environment prevails to a degree in historical neo-institutionalism.

institutional context. Hence it rejects the assumption that institutional contexts are homogeneous. Social relationships and the impact that collective norms have on these relationships are examined in conjunction with the historical underpinnings and structural embeddedness of the given ties (Djelic, 1999). As opposed to a static framework provided by rational-choice neo-institutionalism in the analysis of the effects of co-operation, historical neo-institutionalism offers a more articulated view of the characteristics of technology, role of knowledge, nature of the firm and dynamics of competition, considering the cognitive dimension of the innovation process (Colombo, 1998). For instance, although market opportunities lead to innovations in organisational design, these innovations are not necessarily the outcomes of rational lines of thinking about the most efficient way to organise. Organisational practices, rather, represent legitimated structures and cultural understandings (Hamilton and Biggart, 1988). The sensitivity to the historical context of work systems or path-dependencies do not allow for 'best practices' of a particular institutional environment to be uniformly imitated by the adopters embedded in a different institutional setting. For example, Patel and Pavitt's (1997) study on 400 of the world's largest firms shows that their technological competencies are influenced by the firms' principal products and the conditions in their home country. It is claimed that managers are heavily constrained in the directions of their technological search given the "complexity and path dependency in the accumulation of firm-specific technological competencies" (ibid., p. 141). Historical neo-institutionalism is sensitive to national contexts, or what Clark (2000) calls the 'zones of manoeuvre' (which will be defined in Section 2.2). In other words, path dependencies, or pre-existing capabilities inherent in contexts and firms, can enable or limit strategic

choice intended to contribute to a firm's performance (ibid.). This perspective recognises the potential value of creatively modifying and refining, or in the words of Clark (1987) 'appropriating', work systems so that the user develops the new practices on a continually incremental basis.

The basic premise of historical neo-institutionalism is that specific organisational and behavioural tendencies are shaped by certain features of a given institutional setting that is constructed in an evolutionary manner (e.g. Nelson and Winter, 1982). This yields what Boyer (1997) calls 'capitalist diversity'. In other words, institutionalisation of market relations is the result of synchronisation and legitimisation of reactions to crises that have developed in a previous system, and reflect 'the social and political conflict particular to each country' (ibid.). The institutional framework of a nation is taken as an ideal form, specific to a social pattern, based on the following argument:

Where key institutions structuring the nature of property rights and their enforcement, of economic actors, and of the norms governing their interaction are more strongly established at the regional or supranational levels, then we would expect distinctive patterns of economic organisation to become more established within those boundaries.

(Whitley, 1999a:118)

For example, Britain and the USA are seen as characterised by market-oriented capitalism, and founded on the institutional characteristics of decentralisation, external mobility, role of the market and low level of mediation with trade unions. On the other hand, Japan is seen as characterised by high market regulation, institutional co-operation,

credit-based financial system and paternalist authority relations. (Further discussion can be found in Section 2.1.3.4.2). The institutional characteristics of Britain and USA provide for ‘rapid response to recession’ and ‘adjustment to structural changes’ (Boyer, 1997: 90). Similarly, Whitley (1999c) has documented the character of divergent capitalist systems, or in his words multiple ‘national business systems’ (NBSs), as distinct. The multiplicity of cultural and structural legacies suggests the co-existence of national patterns of organising rather than their reconciliation. This derives from the assumption of historical neo-institutionalism that each national institutional background is unique and persistent, explaining significant differences in organisational structuring and operating across national boundaries (Djelic, 1999). Consequently, the diffusion of work systems from one institutional context to another can be constrained by ‘persistent differences’ in patterns of organising. In simple terms, “choices [have] been made long ago and [are] deeply entrenched in an established ‘culture’ that [is] at least in the short term, beyond the reach of contemporary actors” (Crouch and Streeck, 1997:1). In contrast to the environmentally deterministic nature of change within rational-choice neo-institutionalism, it is the change in institutional features that initiates organisational change within historical neo-institutionalism. Organisational change—in the present study, the internalisation of new work systems—is seen as more than a process of adaptation driven by rational actors along lines of efficiency. There is, rather, editing of knowledge-driven work systems, given the constraints and path dependencies on diffusion. Historical neo-institutionalism highlights the stickiness of pre-existing institutional legacies, generally defined at the national level and with an impact on actions at the firm level.

The present study adopts the historical neo-institutionalist, as opposed to the rational-choice neo-institutionalist, perspective in an attempt to address the limits to diffusion of context-dependent knowledge-driven work systems. The focus is on examining the interplay between the context and process of diffusion. (Further justification for the adoption of this perspective can be found in Section 2.1.3.5). This study draws a distinction between institutional characteristics at the macro national level (such as the financial system, state, legal system, public training system and union strength) and those at the meso local level (such as the location of the company, skills base in the region, and level of industrial dispute, discussed in Section 2.2.1). Given this analytic line of demarcation, the perspective adopted in this study differs from others that do not separate the national institutional characteristics from the local institutional characteristics (e.g. Karnøe, 1995; Erramilli, 1996). It should also be emphasised that there is a focus here on dominant institutional characteristics that govern resources, such as labour and finances. In practice, few countries are expected to develop all the institutional characteristics “for any single coherent way of organising economic activities to be institutionalised as the dominant one” (Whitley, 2000b:858).

The differences in the institutional and societal infrastructures and networking arrangements can lead to variations in internalisation of work systems (Swan *et al.*, 1999). This suggests a neo-institutional rather than a neo-contingency interpretation. The aim here is not to highlight the need to achieve compatibility between work systems and the task environment, or to identify systems that are seen as the most efficient at particular points in time, as do scholars such as Miles and Snow (1978). Rather, there is

an attempt to consider the contextual influences and the role of actors in work systems diffusion involving the interaction of technology, organisation and society (Slappendel, 1996). It should be noted that the historical neo-institutional approach adopted here cannot be subsumed under the neo-contingency framework, but a basic contingency argument is inevitable. As Sorge (1991:186) argues “whenever a correspondence between markets, strategies, organisation and human resources is postulated or recognised, the argument which makes this explicit is potentially or even necessarily of a neo-contingency one”. It is desirable to have a fit between institutional regimes and the diffusion process to extend the explanatory power of the analytic framework used in this study. Loveridge (1998:1049) contends that “much of the characterisation of national systems in the institutionalist literature has been based on the broadest of generalisations that sometimes appear to have gained credibility through repeated mutual citation”. There is an attempt in this study to fine-tune such generalisations through an empirical evidence of actors’ influence at the firm level on the diffusion process.

2.1.3.4.2 Divergent Capitalisms

Various studies conducted within neo-institutionalism argue for the variation in actors’ ability to act legitimately across institutional settings, for example, the following: Maurice *et al.* (1986) and Sorge (1991) on the ‘societal effects’ on work systems; Whitley (1992-2000) on ‘national business systems’; Dobbin (1995) on the embeddedness of economic rationality in institutional norms and conventions; Hollingsworth and Boyer (1997) on ‘social systems of production’; Herrigal (1996) on ‘industrial orders’ in Germany and the USA; and Hamilton and Biggart (1988), Orrù *et*

al., (1991) on post-war East Asian capitalisms. Each institutional context is believed to have developed “in contrasting ways as a result of pre-industrial legacies, patterns of industrialisation and twentieth-century state structures and policies” (Whitley, 1999b:16). Among the historical neo-institutional arguments listed, those on divergent capitalisms are the most appropriate in explaining for the different forms of economic organisation in different national contexts. Given the aim of this research, namely to provide a detailed, systematic and rigorous comparison of the extent to which work systems are internalised in a ‘foreign’ institutional environment, a framework that is sensitive to contextualities and pays systematic attention to the influence of social institutions is essential in providing answers to the central research question.

The research focuses on Whitley’s (1992-2000) work on divergent capitalisms. This work is concerned with “describing and explaining variations in economic organisation regardless of whether they become established in geographical regions, states or continents” (Whitley, 1999a:117). It addresses the development of each institutional context in contrasting ways as a result of pre-industrial legacies. The central motive of the divergent capitalisms view is to account for the existence and persistence of nationally distinct forms of economic organisation. Although this view encompasses research into the social constitution of the underlying processes, it does not adopt a processural perspective to cross-national comparisons. The key element in the framework is the firm, which is conceptualised as the dominant unit of governance, differing across national systems. Examples include the ‘chaebol’ in South Korea and the ‘keiretsu’ in Japan. The divergent capitalisms view highlights key macro-level institutions that are seen as shaping different forms of business systems. Whitley (1996, 2000a) identifies the

governance principles of each market economy or business system as the state, financial system, public training system, legal system, authority relations and union strength. The degree of standardisation of co-ordination and forms of economic organisation are commonly observed in these principles or systems. The key institutional features combine to form six types of business systems: fragmented, co-ordinated industrial district, compartmentalised, state organised, collaborative and highly co-ordinated (see Table 2.1). Each of these systems is seen as reflecting the principles of domination of their institutional environments (e.g. Whitley, 1999b).

Table 2.1 The Institutional Characteristics of Different Business Systems

Type of business system/ Key features*	Fragmented	Co-ordinated industrial district	Compartmentalised	State organised	Collaborative	Highly co-ordinated
State	Predatory	Considerably co-ordinating locally but limited nationally	Regulative	Co-ordinating and developing	Considerably co-ordinating	Co-ordinating and developing
Financial system	Low risk-sharing by banks	Some local bank risk sharing	Capital market-based	Credit-based	Credit-based	Credit-based
Public training system	Weak	Strong	Limited in scope and effectiveness	Limited	Broad in scope and strong	Limited
Legal system	Weak	Considerably reliable	Reliable	Considerably weak	Reliable	Considerably reliable
Authority relations	Paternalistic	Limited communitarian	Contractual	Highly paternalist	Highly communitarian	Highly paternalist
Union strength	Low	High	Low	Limited	High	Limited

* The effect of the key features in each business environment is observed under ceteris paribus conditions.

Source: Adapted from Whitley (1999b:60 and 2000a)

Variations in institutional features arise from the fact that institutionalised rules are enacted in a non-uniform way. Given the embeddedness of organisations in larger social relations (Granovetter, 1985), principles of governance would be expected to differ across business systems. In other words, the way in which managerial co-ordination and work organisation of the firm are brought together reflects the institutional context in which the organisation is embedded. When organisations extend their operations into new institutional contexts, they are highly likely to adapt their existing structures and cultures. Institutional constraints can affect the degree to which work systems are diffused to the host country (Morgan *et al.*, 2000b).

The work on divergent capitalisms has been extended to include firm-level organisational characteristics. As will be discussed in Chapter 3, these include, among others, task fragmentation, worker discretion and involvement, managerial control of work organisation, separation of managers from workers and employer commitment to employment security (Whitley, 1999b).¹⁴

This research, as further discussed in Chapter 3, focuses on the structural and cultural legacies of two of the six business environments: 'highly co-ordinated' and 'compartmentalised' systems, as the empirical investigation is undertaken in Anglo-Japanese settings alone. Japan exemplifies the 'highly co-ordinated' business system, whereas the US/UK context typifies the 'compartmentalised' system (Whitley, 1999b). It is recognised here that there is a wide variation among firms within Japan. Nevertheless, as a whole, the Japanese MNCs tend to exhibit commonality in their Japan-based systems

with regard to work organisation, labour relations and employee development. Hence the underlying philosophies, such as team-based work, ambiguous job descriptions, a seniority-based reward system, staffing from within and training through job rotation, remain the same.

Highly Co-ordinated Business Systems

According to Sako (1997), the organisational integration of economic activities is associated with the national system of industrial relations. High levels of integration are observed in environments characterised by high levels of state risk-sharing, strong intermediaries and high market regulations, coupled with some union strength, limited public training system and high trust in formal institutions (Whitley, 1999b). Such environments encourage collaboration between actors, and develop highly co-ordinated systems where risks can easily be shared and the state plays a highly co-ordinating role.¹⁵ For example, studies in Japanese business systems (e.g. Orrù, 1997) show that institutional co-operation is a key feature of the overarching organisational logic of highly co-ordinated business systems. In the context of cross-national diffusion of work systems, firms operating in highly co-ordinated business systems are not likely to be involved in diffusing central activities that are closely linked to domestic partners and agencies. “They [highly co-ordinating systems] find it difficult to shift key activities and significant resources to foreign locations, and moreover are unlikely to see the need for

¹⁴ These characteristics are discussed in Section 3.1.2, Chapter 3.

¹⁵ Research on Japanese overseas plants (e.g. Kenney and Florida, 1993) demonstrates that highly co-ordinated systems “encourage domestic partners to establish subsidiaries in the same locations so that they can share risks with them and rely on established relationships to reduce uncertainty in the new environment” (Whitley, 1999c:18).

such investment as long as their domestic location and commitments are viewed as providing major advantages” (Whitley, 1999c:12). Given their strong embeddedness in a network of mutual obligations and commitment (Gerlach, 1992; Sako, 1992; McMillan, 1996), firms in these systems tend to implement incremental, continuous and interdependent change. This means such firms are more likely to constrain their radical diversification into related fields. A credit-based financial system also has a role to play in this, as banks (which have strong links with their clients) become reluctant to invest in unrelated industries. Hence, there is less of an opportunity for an entrepreneurial function. However, this does not imply that firms in highly co-ordinated systems have limited firm-specific competences. As is suggested by Whitley (2000b:878, brackets added), “skills are more firm dependent and specific [in highly co-ordinated business systems, such as Japan] than in economies with strong public training systems organised around existing industries [as that in Germany]”. As will be shown in Chapters 3, there is greater emphasis on tacit work systems and, hence, greater work-system specificity in highly co-ordinated NBSs. There is a lock-in to growth goals with credit-based financial system and long-term employer-employee relations. Such relations based on mutual obligations limit opportunistic behaviour and allow for considerable trust between actors, as well as major knowledge and risk sharing. This institutional characteristic may not prevail in other business systems, and its absence may facilitate the diffusion of work systems to other contexts. However, the strong connection also means that actors may find it difficult to exit the network when prevailing conditions change (e.g. Zysman, 1983). Furthermore, the institutional arrangements of highly co-ordinated systems, such as reciprocal paternalist authority relations, encourage investment in skills development.

These skills are typically firm-specific due to long-term commitments and an 'experience' model of education (Hibino, 1997), encompassing in-house training and job rotation (Dore and Sako, 1997).

The 'structure and flow' aspects (Sorge, 1996:73) of highly co-ordinated institutions form distinct national patterns, in which firms and inter-firm relations are governed within a tightly-knit network. Sorge (1996) conceptualises the structural aspects as the properties that characterise the composition of a group of people or of a system, such as different types of labour based on age, experience, specialism and learning. The flow aspects refer to "additions and subtractions which occur with regard to a dimension over a certain period of time", such as labour market mobility between firms (ibid., p. 73). Embeddedness in a tightly-knit network can have negative implications for the diffusibility of work systems from strongly institutionalised environments that limit opportunistic behaviour and depend on considerable trust between social partners to contexts exhibiting low extent of alliance integration (Whitley, 2000a). In other words, highly localised, context-dependent work systems can be 'sticky' to diffuse to other institutional contexts. Allied hierarchies, commonly observed in highly co-ordinated business systems, tend to allow for limited diffusibility of firm-specific competitive advantages to foreign subsidiaries and limited subsidiary development of distinct organisational capabilities, given their highly embedded nature (Whitley, 1999b). Such hierarchies are seen as internationalising more slowly and incrementally than firms in, for example, compartmentalised business systems. "A more common pattern of internationalisation for firms in highly co-ordinated environments is to rely initially on

exports because of their dependence on business partners and employees for competitive advantage” (ibid., p. 21). Societal patterns may not be reproduced in different contexts even where an oncoming innovation is basically similar, for “changes are not the same in every society, even when we are dealing with technical challenges” (Sorge, 1996:81).

The discussion of the institutional characteristics of highly co-ordinated business systems allows one to claim that the knowledge-driven work systems of firms in highly co-ordinated business systems are likely to be less diffusible to other institutional environments. The variation in labour market institutions, state structures and policies and financial systems in different societies can discourage the diffusibility of knowledge-driven work systems to other firms. (This will be further explained in Section 3.1, Chapter 3).

Compartmentalised Business Systems

The compartmentalised business system, in which UK organisational practices are embedded, differs greatly from the highly co-ordinated system in its institutionalised procedures regulating business practice and the norms governing market boundaries. In less integrated or embedded contexts of economic relations with relatively easy market entry and exit, such as those of the US and the UK, the dominant institutions discourage co-operation and collaboration between business partners, including employers and employees. Work systems or organisational practices of firms in compartmentalised business systems are not strongly embedded in social networks of close co-operation and high interdependency. This is illustrated by the member firms’ low capacity for collective

problem solving (Lane and Bachmann, 1997). Relations between actors are defined as 'arm's length' and typically adversarial.¹⁶ Firms are relatively isolated from each other. Consequently, the influence of employee interests and business partners on decision-making is low, as is frequently reported in studies of Japanese operations in the UK (e.g. Murata and Harrison, 1991). This has negative implications for continuous innovation and the development of long-term growth strategies. There is, rather, a reliance on a strongly institutionalised formal system of rules and procedures that facilitates delegation and trust in formal institutions. Trust is governed 'contractually' rather than through 'obligational contracting' (Sako, 1992). For example, Kester (1996:108) suggests Anglo-American corporate governance emphasises "the reduction of agency costs associated with the separation of ownership from control, relying more heavily on formal, legalistic mechanisms to order commercial relationships among transacting parties". The co-ordinating role of the state is limited. The state acts more as a regulator, where "finance flows through competitive capital markets rather than banks, and training is more a matter for individual investment than for co-ordinated collaboration between state agencies, employers and unions", creating a predictable environment in which rationality of decision-making can be highlighted to a greater extent (Whitley, 1999c:8). This has the implication that organisational practices of compartmentalised business systems are more diffusible to other institutional environments. The limited collaboration, short-termism, weak control systems and fragmented training systems in compartmentalised institutional environments generate work systems that are easier to diffuse than those of highly co-ordinated environments.

¹⁶ Formal institutions in compartmentalised business environments "tend to be organised into discrete spheres of influence with little co-ordination between them" (Whitley, 2000a:8).

Individualism and limited conventions governing roles in compartmentalised business systems (e.g. Lewchuck's (1992) discussion of the diffusion of Fordist technology in Britain) may foster entrepreneurialism in firms. However, this may not necessarily reflect firms' capability to develop a firm-specific or idiosyncratic knowledge base. As Lane (1996:276) argues "lack of support for favourable access to capital, skill and R&D [in compartmentalised business systems]...has reinforced the risk-aversion and short-termism fostered by the [capital market-based] financial system", which can discourage the development of firm-specific knowledge base.

Compartmentalised business systems are also linked to fragmented training systems. In other words, skills training and control systems are identified as weak. Limited collaboration between employers, unions and other groups discourages co-operation in the management of training systems (Whitley, 1999b). It is argued that "while collaboration between functions has improved, the level of dismantlement of these internal vertical specialisations is only slowly taking effect in Western firms" (Mueller and Loveridge, 1997:146). As commitment and mutual dependence are limited, employee contribution to knowledge creation is constrained. Adaptation to environmental changes is through organisational structuring rather than in-house learning and employee adaptability. The implications of these institutional features for diffusibility of work systems need to be considered. Isolated hierarchies, commonly observed in these systems, do not offer the same advantages in terms of sharing idiosyncratic knowledge with employees and business partners as allied hierarchies in highly co-ordinated systems. Competences are not 'constrained' by obligational ties to partners. Hence they

are more mobile across borders. This deems work practices in compartmentalised business systems more diffusible to other institutional environments (Whitley, 1999b). In order to manage risk and uncertainty, firms in compartmentalised systems are more likely to move assets across sectors and gain experience of managing diverse activities. They are also more likely to delegate autonomy to subsidiaries, and encourage the adoption of polycentric rather than ethnocentric strategies.¹⁷ As Whitley (1996c:20) contends, firms in compartmentalised business systems “are likely to assume that their firm specific competitive advantages can be equally successful abroad as at home...since [organisational competences are] not closely tied to particular links with local business partners and institutions”.

2.1.3.5 Comparing Perspectives within Japanisation, Innovation Processes and Neo-institutional Literatures

As is shown in Table 2.2, the four major perspectives as applied to knowledge-driven work systems diffusion differ from each other in some important aspects. It should be noted that the distinction drawn in this table is not based on a comprehensive list of mutually exclusive features of the four major perspectives. The table is a schematic presentation of the dominant characteristics of each perspective in comparison to the other. Marked differences in the table concern the focus (processes versus technical and/or structural properties of firms), the level of investigation (intra-firm versus inter-firm), the nature of the framework (universal versus embedded) and the view of work systems diffusion (objectified versus context-dependent or sedimented). The attention

¹⁷ Polycentric strategy refers to the adoption of a system that conforms to local practices (Rosenzweig and Nohria, 1994).

paid to the nature and historical roots of social institutions also differs among the different perspectives.

With reference to the research aim, it is essential to select a perspective that provides a systematic and rigorous comparison of the levels of implementation and internalisation of Japanese work systems in 'foreign' institutional environments. The labour process view within the Japanisation literature presents a universalistic approach to the control-related aim of introducing Japanese work practices. Although this view focuses more on processes than technical and structural properties of firms (which is in line with the aim of the current research), it predominantly investigates intra-firm characteristics, such as the impact of Japanese work systems on employee empowerment, rather than inter-firm organisation of resources. The nature of work systems diffusion (whether it is objectified or context-dependent) is not of concern in this view. There is a focus on governance and control mechanisms implicit in the diffusion of work systems. The impact of path dependencies and institutional constraints on the internalisation of such systems is not acknowledged. The universalistic understanding of the control-related nature of work systems in the labour process view within the Japanisation literature is not in accordance with the purpose of the present research.

Nor is the 'lean production' perspective considered as suitable for forming the basis of the analytic framework. Although the level of investigation of work systems diffusion is inter-firm, this perspective ignores the contextualities in the diffusion process. It emphasises on the objectified nature of work systems diffusion with a focus on the

diffusion of work structures and technicalities. There is a universalistic view of work systems as best practices that can be diffused with ease to other contexts. Constraints on the diffusion process are not considered.

At a first glance, the user-oriented perspective within the innovation processes literature seems well suited as a basis for the analytic framework in this study. This perspective focuses on processes and acknowledges the social embeddedness of work systems and the context-dependent nature work systems diffusion. It bears similarities with the historical neo-institutional perspective with regard to the sensitivity it shows to contextual features that can lead to differences in the internalisation of alternative work systems. However, studies on innovation processes adopting the user-oriented perspective only recently have aimed at investigating inter-organisational arrangements across countries (e.g. Swan *et al.*, 1999). Majority of the studies adopting this perspective do not link inter-firm level investigations to the influence of institutional characteristics at a national level (Clark (1987) is an exception to this). If a link is made, this is not performed in a systematic manner. The diffusion of organisational practices themselves is not considered as a key learning activity. Rather, internal processes and strategic decisions about innovation-design of user organisations are analysed.

In contrast to the user-oriented perspective within the innovation processes literature, the historical neo-institutional perspective offers a framework that links characteristics of work systems to path dependencies within particular institutional settings in a systematic manner (e.g. Djelic, 1998). A systematic comparison of the context-dependent nature of

work systems diffusion provides a rigorous analysis of the diffusion process. The focus is not on the process of technology development but on that of diffusing organisational structures and processes, including HRM activities (e.g. Sorge, 1991). The impact of key characteristics of distinct social institutions on the firm is acknowledged. This historical neo-institutional approach is different from Porter's (1990) work on the competitive advantage of nations. It is more specific, restricted to fewer countries, related to the organisation and human resources literature in greater detail and informed by systematic comparisons of cases. Regarding these merits, the historical neo-institutional perspective is considered as the appropriate basis for constructing the analytic framework in the present study. As the analyses using the historical neo-institutional perspective generally reside at the macro national level (e.g. Herrigal, 1996), arguments are drawn from the user-oriented perspective in the innovation processes literature to formulate propositions on the diffusion process at the micro firm level.

Table 2.2 The Comparison of Four Major Perspectives

Approach	Key authors	Major focus	Dominant level of investigation	Framework used	View of work systems diffusion
The Labour Process Perspective within the Japanisation Literature	Briggs (1988); Dickens and Savage (1998); Delbridge (1998)	Comparison of work processes within firms in different countries	Intra-firm	Universalistic understanding of the control-related nature of Japanese work systems	Not considered
The Lean Production Perspective within the Japanisation Literature	Womack <i>et al.</i> (1990); Kenney and Florida (1993) MacDuffie (1995)	Comparison of work structures and technicalities between firms in different countries	Inter-firm	Universalistic view of work systems as best practices	Objectified
The User-oriented Perspective within the Innovation Processes Literature	Swan and Clark (1992); Scarbrough <i>et al.</i> (1998); Scarbrough and Swan (1999); Marshall and Sapsed (2000)	Comparison of innovation development within firms and across projects	Intra-firm	Acknowledges embeddedness of work systems	Context-dependent
The Historical Neo-institutional Perspective within the Neo-institutional Literature	Sorge (1991); Hollingsworth and Boyer (1997); Djelic (1999); Whitley (1992-2000)	Systematic comparison of nationally distinct patterns of organisation, including structures and processes in different countries	Inter-firm	Acknowledges embeddedness of work systems in broader institutional arrangements	Context-dependent

Source: See text

In the following section, a number of shortcomings are listed with regard to observations in the literature on the historical neo-institutional perspective. The limitations of the perspective are addressed in order to develop more process-sensitive framework that can guide and structure the present study. In other words, Whitley's work on divergent capitalisms, which addresses structure rather than agency, is furthered by linking structures to micro-level social action in which they are implicated. "Contexts of meaning within which individuals define themselves, interpret their roles and act accordingly" are acknowledged without losing sight of the structural aspects (Karnøe and Nygaard, 1999:85).

2.2 The Historical Neo-institutional Perspective: Critique and Refinements

The historical neo-institutional perspective adopted here provides an evolutionary, path-dependent view of transformation. It delineates more a linear, sequential process of change than a cyclical one. It does not account for instances of radical change (Djelic, 1999), and runs the risk of overlooking the possibility that organisations can be sufficiently powerful to enact their environments. In contrast to the evolutionary theory (Nelson and Winter, 1982), the historical neo-institutional perspective is concerned with the peculiarities of each institutional context that explain for persistent differences in organisational structuring and operating. The historical neo-institutional perspective does not assume path-determined (as opposed to path-dependent) firm behaviour patterns and market outcomes in an attempt to determine the profitability of each firm. Although the process of change is seen as highly situation-specific and decisions are perceived as being

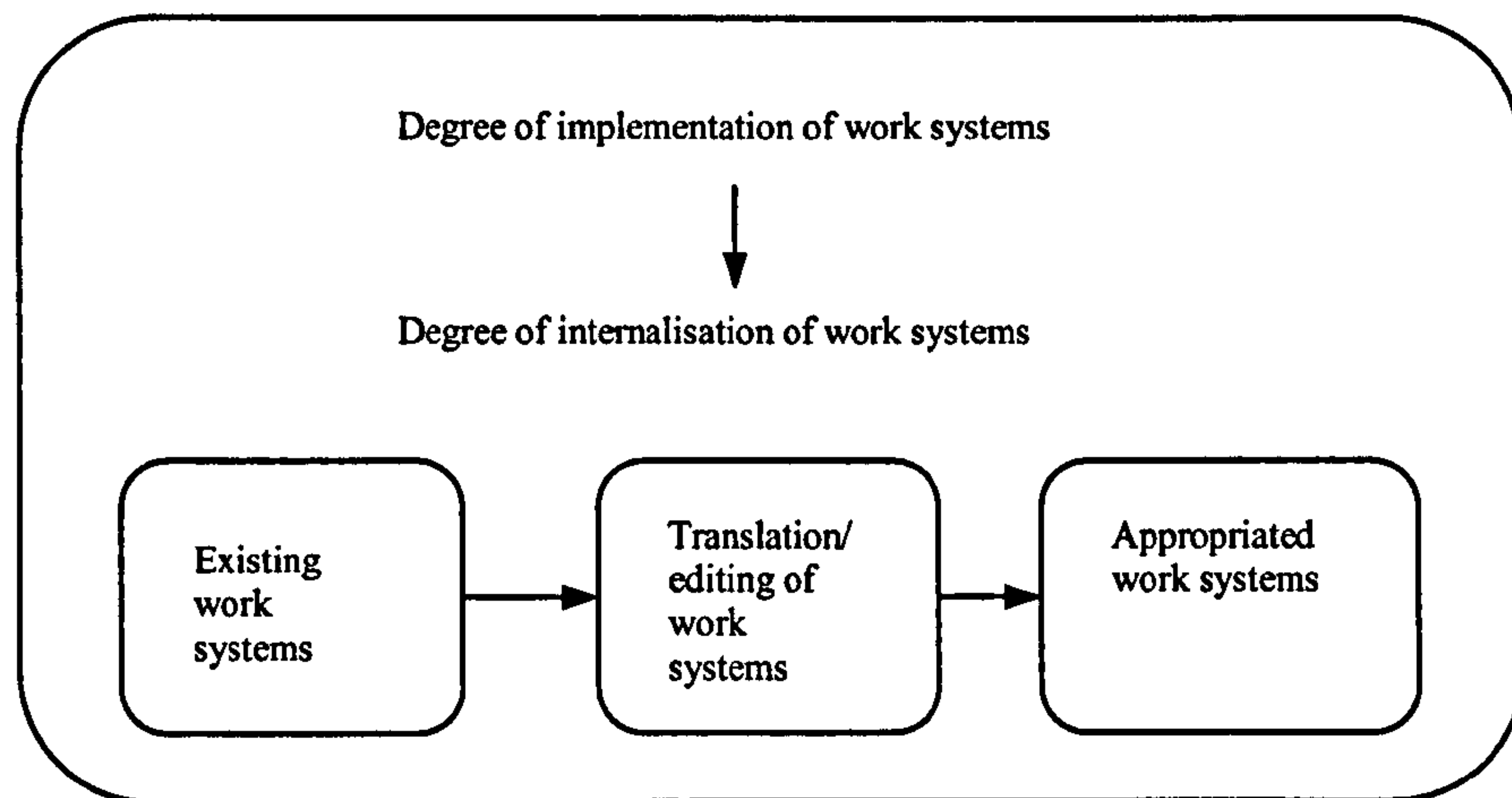
influenced by various environmental factors, organisational solutions within historical neo-institutionalism are regarded as being defined within specific historical contexts via unanticipated developments. This draws the criticism that the historical neo-institutional perspective is static in nature. Although the historical variant of neo-institutional theory rejects the idea of convergence in organisational structuring and operating, it represents a new constraint, in that, institutional contexts are seen as narrowing firms' choices with respect to strategies and solutions and as shaping goals and preferences (Hollingsworth and Boyer, 1997). The emphasis on regularity and stability (or incremental change) within this perspective rarely builds in the role of the collective or individual actor. Rather, actions are seen as predetermined by institutional conditions. However, a firm's knowledge can be "continually re(stituted) through the activities undertaken within a firm" (Tsoukas, 1996:22). "Whitley offers no amplification on how [institutional] forces interact with the actors' social responses, seen to have become institutionalised within the structures he delineates" (Loveridge, 1996:5, brackets added). Hence, it is proposed in the present research that the role of actors in shaping work systems is important. Attention is paid not only to structural and cultural developments in the past to arrive at explanations about present diffusion processes, but also to the role of management and the interpretation of alternative work systems by employees. The internalisation of knowledge-driven work systems can be "blocked or facilitated by the nature of the cultural infrastructure and the role of human agencies" (Loveridge, 1987:193). The crucial factor in the internalisation of such systems is the interaction between the context and the process of diffusion. There is an interest here in investigating this interplay. The historical neo-institutional perspective is refined to incorporate the process dimension of

the diffusion of work systems in this study. Empirical evidence is provided to integrate actors into action and to combine action with constraints by highlighting the limitations to the diffusion process. As suggested by the arguments in the innovation processes literature (e.g. Hislop *et al.*, 1998), the internalisation of work systems is an active process involving actors' decisions to adopt new ideas, where the links between implementation and internalisation processes are important in determining the outcome of the diffused system. Furthermore, implementation is a necessary condition for internalisation of a work system, for a work system cannot be infused with value unless it is used in the organisation (Kostova, 1999). Hence, context-dependent knowledge is subjected to actors' interpretation upon its diffusion to a new setting. In other words, its "utilisation or development during the innovation process requires the active involvement of those workers who possess it" (Hislop *et al.*, 1998:438). Actors have the potential to creatively interpret their past experiences. "Acquisition of knowledge is not a simple matter of taking in knowledge; rather things assumed to be natural categories, such as 'bodies of knowledge', 'learners', and 'cultural transmission' require reconceptualisation as cultural, social products" (Lave, 1993:8). In other words, knowledge undergoes construction and transformation when put to use (Blackler, 1995).

There is a dynamic interaction among episodes of external acquisition of knowledge, its use by firms and the commitment by firms to the extent that the acquired knowledge assumes a taken-for-granted or institutionalised nature. Knowledge-driven work systems are institutionalised when "the employees at the recipient unit attach to the practice a symbolic meaning and value, as have the employees from the home country" (Kostova,

1999:311). Actors are a vital component of work systems that are diffused by translations to their international affiliates. The refinement suggested here is displayed in Figure 2.1 (which will be explained in detail in Section 2.2.1.4). This figure constitutes one of the building blocks of the analytic framework. It indicates that, triggered by operational and/or strategic motivations, work systems are acquired and put to use by management. The role of management is observed in the implementation of work systems. Furthermore, the acceptance of alternative work systems within the firm points to the translation of existing work systems by employees that results in appropriated work systems or the blending of 'new' work systems with the existing ones. The adopter view of diffusion is addressed here with an emphasis on the investigation of the degree of internalisation of knowledge-driven work systems. The implementation and internalisation processes are viewed as ongoing processes.

Figure 2.1 The Implementation and Internalisation of Knowledge-driven Work Systems with a Process Dimension



Source: See text

Although the historical neo-institutional perspective acknowledges the process of editing work systems, it views this process as driven by pre-existing legacies. However, actors may not be fully constrained or determined in their values and interests. For example, they can amplify their decisions through their memberships in networks. Clark (2000) contends that contexts imply ‘zones of manoeuvre’. In other words, firms do not act alone nor do they “reconfigure [their] repertoire of capabilities as a design rule except within certain degrees of freedom” (ibid., p. 304). There is co-evolution, in the sense, contexts contain constraints as well as enablers and, hence, pre-existing processes in a transitional period may lead to a new configuration. This is illustrated by Blundel and Clark’s (2001) study on two cheesemakers, categorised as artisanal or craft-based firms, in the UK. Their tale of the cheesemakers shows that networks in which the firms are embedded are dynamic, idiosyncratic and living phenomena. They argue that ‘inherited’ factors within the specific social structures of the two cheesemakers shape learning and, hence, the growth trajectory of firms.

The level of analysis in neo-institutional research is commonly at the macro level. “There is a pronounced need for cross-cultural scholars to conduct more micro-level research that documents what happens when managers from different cultures work together” (Brannen and Salk, 1999:334). There is only a mention rather than a detailed empirical study of the impact of the national level on that of the firm. The national level is generally considered as the appropriate level of analysis for social institutions (Whitley, 1992). However, social patterns shaping the diffusion process at the firm level also need to be considered. Key characteristics of the institutional environment in which a firm operates are insufficient for a detailed analysis of the implementation and internalisation of work systems at the firm level. Once again, an attempt is made to refine the historical neo-institutional perspective by complementing the national level with the firm level. This will be detailed in Section 2.2.1. Although Whitley (1999c) defines key work systems characteristics at the firm level in his later work, it is not clear how these systems are affected in a context of cross-national diffusion across conflicting national business systems.

The historical neo-institutional perspective also has the shortcoming of disregarding local institutional characteristics in its analysis. Mueller and Loveridge (1997:154) propose that “what is perhaps required is that the interaction between the MNC and the key institutions isolated by NBS/NIS theorists should be studied in greater depth in its local context and across a range of sectors as well as a number of levels of corporate activity”.

Key contextual characteristics can be both industry-specific and site-specific. The

historical neo-institutional perspective examines dominant patterns of institutional arrangement, and hence is not sensitive to different levels of implementation and internalisation of work systems across different localities, such as location sites. As is discussed in the next section, it is useful here to analyse the nature of the local (in addition to the national) contexts of firms, given that the research focuses on a comparative analysis of the diffusion of work systems. The present study addresses these shortcomings by aiming to investigate the interaction between the context and the process.

2.2.1 Constructing the Analytic Framework

In line with the historical neo-institutional perspective adopted here, the diffusion of Japanese knowledge-driven work systems is seen as being channelled and constrained by national social institutions. In other words, a “firm’s knowledge is derived from the broader industrial and societal context within which a firm is embedded” (Tsoukas, 1996:22). Key social institutions that are likely to influence the degree to which work systems are internalised were listed in Section 2.1.3.4.2. The following sections, from 2.2.1.1 to 2.2.1.3, detail the nature of the influence of national institutional, local institutional, organisational and group characteristics on the diffusion of work systems. Similar to Figure 2.1, each of the figures presented in the three sections constitutes the building blocks of the analytic framework. This is followed by a discussion of the attributes of work systems diffusion in Section 2.2.1.4.

2.2.1.1 The Influence of Key Institutional Characteristics

National Institutional Level

Governance structures and capabilities developed in home countries can affect the nature of the investments made, where and when they are made, and how they are managed in internationalisation efforts. It is suggested that weakly institutionalised contexts of economic activity will be less conducive to developing stable and wide ranging partnerships and long-term commitments across boundaries (Whitley, 1999c). For example, particularistic environments, such as China, are notable for their weak state combined with weak norms of governing economic transactions. In contrast to weakly institutionalised settings, highly co-ordinated business systems, such as Japan, present strongly institutionalised systems of normative rules that lock key actors into long-term commitments, and encourage co-operative behaviour by restricting exit from business networks. Hence, highly co-ordinated business systems would be expected to be favourable to the internalisation of work systems.¹⁸ However, the ability of firms in such systems to diffuse their work systems to other institutional contexts is questionable. Firms in these systems are likely to “limit the size and centrality of their initial FDI” (Whitley, 1999c:13). (This was discussed in detail in Section 2.1.3.4.2, under Highly Co-ordinated Business Systems). Given the embeddedness of practices in home economies, commitments to new partnerships are expected, in general, to be limited. There is likely to be an integration of foreign subsidiaries into the parent company’s operations, and

¹⁸ The analytic distinction between highly co-ordinated and compartmentalised business systems in its link to the degree to which work systems are internalised will aid in the formulation of propositions in Chapter 3.

linkages developing incrementally. Nevertheless, it is likely that firms in highly co-ordinated systems will allow their subsidiaries to learn and adopt new ways of doing things, as long as there is control over key or strategic resources.¹⁹

Firms operating in highly co-ordinated systems are highly likely to adopt complex and risky innovation strategies that require considerable amount of both tacit and explicit knowledge to develop and implement such innovations. This in turn can enhance and develop organisational capabilities (Whitley, 2000b). Skills in these institutions are “more firm-dependent and specific than in economies with strong public training systems organised around existing industries” (ibid., p. 878). Work systems are developed in-house and regarded as highly tacit and difficult to access by outsiders.

Whereas, given the weak public training systems, the role of the state as a regulator, flow of finance through capital markets and reliance on formalised rules and procedures (see Section 2.1.3.4.2 for a detailed discussion), compartmentalised business systems, such as the UK, constitute a weakly institutionalised environment. Such business systems are likely to be unfavourable to the internalisation of work systems, for firms in these systems are characterised by ‘arm’s length’ relationships, and entry and exit arrangements for actors are more flexible. Firms are not constrained by obligational ties to stakeholders, including employees. Their competitive advantages are not dependent on other actors in a business network, and are more willing to invest major resources abroad (Whitley, 1999c). As business partners cannot be relied upon to manage risks, firms in

¹⁹ The separation of control and local adaptation activities is difficult where the knowledge diffused is highly tacit (Kogut and Zander, 1993).

compartmentalised systems “control more widely varied and unconnected activities and resources than co-operative ones” (ibid., p. 14). Consequently, they gain a broader range of experience in managing the activities of different kinds of industries. Transplants of such firms are more likely to be delegated autonomy by the parent company in developing strategies to adapt to the local context. Knowledge of such firms tends to be highly mobile given their inclination to standardise work procedures. Hence, they are likely to assume that their organisational capabilities can produce successful results abroad as at home.

Firms operating in compartmentalised systems are highly likely to adopt innovation strategies that are often dependent on new, codified knowledge as a key to organisational competence (Whitley, 2000b). Their formalised systems are likely to be easier to diffuse than tacit knowledge. Low skills and limited employee involvement in such business systems can hinder the learning necessary to adapt to changing environmental conditions. Moreover, organisational flexibility is likely to be inhibited by standardisation of knowledge and the limited accumulation of tacit knowledge (Lazonick, 1998).

The results of the above discussion are summarised in Table 2.3.

Table 2.3 The Impact of National Institutional Characteristics on Work Systems Diffusion

Characteristics of work systems	Highly co-ordinated	Compartmentalised
Willingness to diffuse	Limited	Considerable
Diffusibility of firm-specific competitive advantages to foreign subsidiaries	Limited	High
Central control of subsidiaries and integration with parent companies	Considerable	Variable
Subsidiary development of distinct organisational capabilities	Limited	Considerable
Extent to which competitive competences are firm-specific (with reference to tacitness of work systems)	High	Low

Source: Adapted from Whitley (1999c)

Local Institutional Level

In addition to the impact of institutional variation at the national level, local institutional characteristics can have an effect on the implementation and internalisation of Japanese knowledge-driven work systems. The salient characteristics that are considered in the present research are the location area and site of companies' level of industrial dispute and the skills base in a given region.

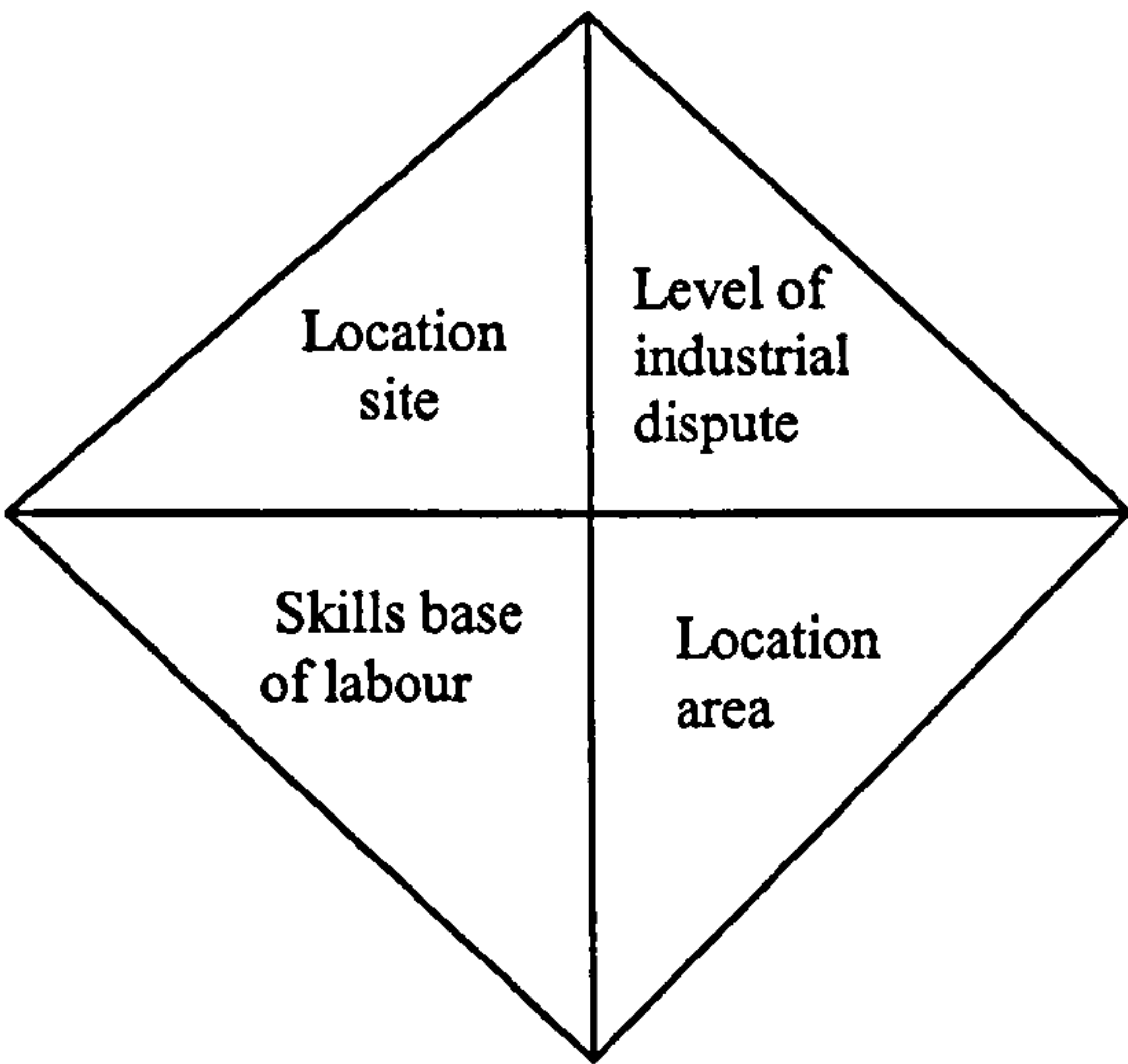
A number of researches carried out in the area of 'Japanisation' have examined the impact of local labour supply and industrial relations of transplants on work organisation (e.g. Elger and Smith, 1994; Sharpe, 1999). For example, Oliver and Wilkinson (1992) identify low trade union strength (i.e. low labour dispute) as facilitating the diffusion of new work systems in Japanese subsidiaries in the UK. Furthermore, Sharpe (1999) points

to the ability of firms to be highly selective with regard to their workforce (whereby skills can be developed in-house) on a greenfield site with high Japanese inward investment. It is suggested that high levels of foreign direct investment (FDI) familiarise workers in a region with the practices to be introduced. Moreover, there is a strong network to support the adoption of 'new' systems (ibid.). The brownfield site in Sharpe's research presents an unsupportive context, characterised by a traditional declining manufacturing region (i.e. a centre for manufacturing), a low inward investment, a high level of industrial dispute and a heterogeneous workforce in terms of previous work experience, for the internalisation of 'new' work practices. There is resistance to new methods of work and shop floor practices. Similarly, Oliver and Wilkinson (1992:55) show that "trade unions increase the scope for demarcation disputes, greatly hindering acceptance of change and flexible labour deployment within the company".

Consequently, one can expect the degree of internalisation of Japanese knowledge-driven work systems to be high where there is a favourable local institutional context, characterised by a non-unionised labour market, and location on a greenfield site in an area with a strong service sector (where labour can be expected to be relatively free of preconceived ideas in manufacturing, and more easily indoctrinated in new ways of operating). Similarly, one would expect a large supply of unskilled workers in a given area to be conducive to the internalisation of alternative work systems as workers would not be embedded in a tradition of manufacturing that can prove to be difficult to change. For example, Sharpe (1997:186) notes that "the possibility of starting with a new workforce, with comparatively less experience of factory work including middle-aged

women and young workers recently out of school, with fewer preconceptions, [can allow] the introduction of initiatives with comparatively less resistance and fear by the workers”. In contrast, where there is an unfavourable local institutional context, characterised by a unionised labour market, a small supply of unskilled workforce and location on a brownfield site in a centre for manufacturing, one can expect the degree of internalisation of Japanese knowledge-driven work systems to be low (see Figure 2.2 for a pictorial representation of the key local institutional characteristics that can have an impact on work systems diffusion).

Figure 2.2 Key Local Institutional Characteristics that are Likely to Have an Impact on the Diffusion of Work Systems



Source: See text

2.2.1.2 The Influence of Key Organisational Characteristics

The nature of organisational characteristics, such as the size and age of the company, are likely to affect the diffusion of Japanese knowledge-driven work systems (c.f. Lincoln

and Kalleberg, 1990).²⁰ For instance, large organisations can offer more benefits than smaller enterprises, and this can explain the high level of implementation of new practices. Similarly, the longer the affiliate company has been in operation, the more familiar are the employees likely to become with the new work systems.

The nature of work systems can be an important factor in the degree to which systems are diffused. The nature of work systems is conceptualised in this study as structural, cultural, control-related and technological. The four types of work systems are selected in such a way that a comprehensive account of the phenomenon under investigation is provided. The diffusion of organisational structures is defined here as a shift to team structure, that is, to a structural environment created for employees to participate through teams. Organisational structures are seen as having an effect on the work attitudes of individual employees (Lincoln and Kalleberg, 1990).

Cultural work systems are defined in this study as the values and norms (Dacin *et al.*, 1999) that constitute the philosophies which underlie the technical and structural elements of continuous improvement schemes, such as attention to detail and efforts committed to training. Chatman and Jehn (1994) specify respect for people, detail and team orientation as some of the values composing organisational culture. Cultural practices include internal training and small group activities and the underlying principles of valuing the details of work, stressing quality, formalising work stages and demanding high levels of task-related discipline, generally associated with Japanese management,

²⁰ The age of a company is not necessarily related to its location on a brownfield or a greenfield site. For example, a company on a brownfield site may be younger than that on a greenfield site.

and “observed in many overseas subsidiaries of Japanese multinational corporations” (Dedoussis, 1995:735). For example, training can be the core element of Japanese employees’ high levels of commitment to continuous improvement activities (e.g. Cutcher-Gershenfeld *et al.*, 1998). It is proposed here that the degree of implementation and internalisation of Japanese knowledge-driven work systems can be affected by the cultural nature of the diffused practices.

The control-related system is defined here as the degree of Japanese involvement in strategic decisions and operations as well as hands-on management in the host or adopter company. This definition is based on Doz and Prahalad’s (1984) argument that a partner’s influence on joint venture’s strategy formulation and implementation is a better measure of control in circumstances where local firms depend highly on foreign partner’s technology and marketing methods. Such involvement has implications for the adopter firm’s perception of a power exercise by the source company. The role of management or management intervention is crucial in shaping that perception. Managers can act as a medium for acquiring and encoding timely information. Their strategic and operational aims and the way those aims are met (hands-on or hands-off) can have an impact on the extent to which work systems are diffused. For example, a high level of direct involvement in the development of employment skills in Japan is claimed to influence the involvement of workers in innovative strategies positively (Whitley, 2000b). Furthermore, studies on innovation processes show that specialised personnel such as ‘technological gatekeepers’ have a significant effect on the diffusion of knowledge between organisations (e.g. Inkpen and Dinur, 1998). Consequently, it is proposed here

that the degree to which Japanese work systems are put to use and accepted is likely to be influenced by the control-related systems that are diffused.

It should be noted that high levels of control could result in a widespread implementation of source company's work systems but not necessarily lead to a high level of internalisation. As Kostova (1999:319) argues,

when the single motive for the transfer of a practice is to achieve legitimacy with, and approval by, the parent company, the employees at the recipient unit will go on to develop positive attitudes toward the practice. Thus, dependence will have effect on implementation but not on internalisation.

Ideas or know-how about practices can be diffused only when such practices are actually perceived and realised by local employees (Abo, 1992).

A number of researches (e.g. Taylor *et al.*, 1994; Delbridge, 1998) within the 'Japanisation' literature point to worker resistance in response to the power exercised by Japanese expatriate management in the diffusion of work systems. For example, workers can 'survive' the system (i.e. attempt to distance themselves from management, such as by not wearing the uniform and avoiding overtime), 'moderate' the system (i.e. attempt to secure some control over work such as the speed), and 'beat' the system (i.e. secure significant counter-control in relation to the management system and actively to challenge managerial prerogatives) (Delbridge, 1998:194). The worker response to a power exercise can partly reflect the degree to which workers have internalised 'new'

work systems. (This will be further detailed in Section 2.2.1.3).

Here, technological practices refer to advanced production systems technology that is needed for the efficient running of assembly lines and technical systems. Lack of such technology can be an impediment to delivering efficiency improvements (e.g. Boyer, 1998). Technology diffusion is seen as essential for the design and development of new models (e.g. Chung, 1998). For instance, Hyundai relied on technology diffusion and styling concepts from Mitsubishi in order to reduce its lead-time on model development (ibid., p. 171). The adoption of CAD/CAM at Hyundai reduced expenditures on new model development by around 20 per cent by cutting work in progress. Recently, PSA Peugeot Citroën of France has joined forces with Vivendi, the French communications group, to develop the technology necessary for defining the role of telematics in the car of tomorrow (FT.com, 2000). A high implementation of Japanese work systems is likely where there is a skilful blend of people, business processes and technology. This is based on the assumption that the diffusion process is related to group responsiveness, organisational characteristics and institutional characteristics, such as employment systems, labour markets and organisational structure (Hedlund, 1994). Consequently, it is proposed here that technological practices can also have an effect on the diffusion of Japanese knowledge-driven work systems.

In the present study, cultural and control-related systems²¹ are taken as largely intangible, tacit systems, whilst structural and technological systems are seen as representing largely

²¹ Control-related systems are also seen as intangible given the reliance of the Japanese on networks of interdependence rather than formal sets of rules for surveillance (e.g. Fucini and Fucini, 1990).

tangible, explicit systems (see Section 2.1.2 for a conceptualisation of tacit and explicit systems). This is in line with the distinction drawn by Brannen *et al.* (1999:124) between the “‘hard side’ [or the hardware] of the production system—the equipment, technical process flow (such as heat treat and machining), automation and flexible assembly” and the ‘soft side’, or the software, of the production system, such as a system of quality assurance, a clean and orderly workplace and a well maintained equipment wherever possible. The software of the production system, in this context, refers to processes that are heavily people-dependent: that is of high system embeddedness. For example, “in Japanese car plants people are still playing key roles at many levels” (Abo, 1992:171). The plant level people are expected to have the ability to understand the linked processes before and after their own jobs and to be involved in attending the machines as well as the products handled by them. In other words, processes that are more or less tightly integrated with other technical and social systems are seen as being highly contextualised or of high tacitness. Tacit work systems in this study are operationalised as the intangible foundation of continuous improvement schemes, such as discipline, trust, team spirit and participation. In contrast, processes that can easily be detached from their context of formation are characterised in this study as highly objectified, to the extent that they are low in system embeddedness and reflect a large explicit knowledge base. Explicit work practices in the present study are operationalised as the tangible foundation of continuous improvement schemes, such as team-based organisational structure and technology.

It is proposed in the present study (in support of the propositions that are to be formulated in Chapter 3) that an emphasis on the cultural and control-related work systems, as

defined here, can be favourable to the internalisation of knowledge-driven work systems, as it would aid in diffusing the original meaning of the source company's work systems. The association of an exercise of control with the internalisation of work systems is based on the argument that the Japanese tend to exercise implicit forms of control (i.e. social investment that extends well beyond hierarchical principles) that may be less resisted by employees than explicit forms of control such as direct supervision (e.g. McMillan, 1996). Furthermore, "deliberate efforts to build trust, promote behavioural norms and information networks that lead to co-operation, consensus and a sense of collective vision in the Japanese corporation" (ibid., p. 214) can result in high level of internalisation of knowledge-driven work systems. In contrast, an emphasis on the structural and technological work systems, as defined here, can be unfavourable to the internalisation of knowledge-driven work systems. The focus on the tangible features of the alternative work systems can undercut people's motivation to commit themselves to such work systems (e.g. Cutcher-Gershenfeld *et al.*, 1998).

2.2.1.3 The Influence of Key Group Characteristics

The degree of compatibility between values of the source firm and those of the adopter firm can be expected to have a positive impact on the diffusion process. Focusing on the adopter, it is suggested here that since the diffusion of work systems is typically associated with learning, change and innovation, cultural orientation of the adopter towards learning, innovation and change are likely to result in a more positive attitude towards the diffusion process (Kostova, 1999).

The willingness of employees to accept alternative work systems is seen as a key group characteristic that can have an impact on the diffusion process (Mathieu and Zajac, 1990). This is labeled here as the attitude of teams towards the work systems of the source firm. Specifically, it is the commitment, or the sense of ownership, which various groups within the adopter firm display towards quality improvement schemes. An investigation at the group level is added to that at the organisational level in recognition of employees' role in the internalisation of 'new' work systems at the adopter's end. For example, Takeuchi (1981) argues that the contribution of lower levels in the organisational hierarchy in the improvement of overall product quality has been very important in the overall strength of Japanese business activity. Furthermore, Casper (2000:903) argues that medium levels of employee motivation, or a 'hold-up' problem, are highly likely in extremely competitive, demanding and time-intensive work environments, such as therapeutics. The situation is claimed to be even worse in firms that emphasise long-term relational contracts and engage in technological progress in a cumulative manner to generate firm-specific knowledge (ibid.). It is proposed in the present study that high levels of commitment displayed by employees are likely to be favourable to the internalisation of knowledge-driven work systems. In contrast, where the willingness of employees to accept alternative work systems is low, the internalisation of these systems would be expected to be low.

As a whole, the knowledge-driven work systems in this study can be influenced by (i) the differences in national institutional context (i.e. the degree of compatibility of structural and cultural legacies) between the source and the adopter company, (ii) the labour market

and inward investment patterns within the local institutional context, (iii) the organisational characteristics of the adopter firm and the nature of the diffused work systems and (iv) the adopting teams' perceived value of and commitment to the work systems.

2.2.1.4 The Attributes of Work Systems Diffusion

Having discussed the likely influence of multilevel characteristics on the diffusion of Japanese knowledge-driven work systems, this section provides a conceptualisation of the work systems diffusion process. The work systems diffusion process is seen here as composed of two stages: (i) implementation and (ii) internalisation. As this study adopts a context-dependent definition of knowledge and emphasises the adopter or user side, as opposed to the supply side of knowledge-driven work systems diffusion, it is proposed here that a theoretical distinction is needed between the implementation and internalisation process. This is to acknowledge the role of actors in appropriating work systems (Clark, 1987). The “blending and redesign of technical systems alongside changes in organisational practices and local context” is referred to here as the appropriation of work systems (Swan *et al.*, 1999:906; Swan and Clark, 1992). It is seen as the process of unpacking and reblending new ideas within existing contexts in order to develop firm-specific solutions (Clark and Staunton, 1989). The transformation process is “affected by such processes, whereby external knowledge/artefacts/methods are ‘fused’ with internal knowledge/procedures/systems” (Hislop *et al.*, 1998:430). It should be noted that supply-oriented models “presume that the only problems worth considering are inside the user firm at the stage of implementation” (Clark *et al.*, 1992:71). However, this

study attempts to investigate the diffusibility of meaning, value attached to work systems in addition to structural and technical elements. Where the original meaning of the source company's practices are difficult to diffuse, the existing work practices are likely to be redefined and restructured until eventually they become routine.

The concept of 'knowledge-driven work systems diffusion' is used intentionally in this study. It is distinguished from the concept of 'knowledge-driven work systems transfer' which refers to a communications model that emphasises the flow of technical skills or technological capabilities from source to affiliate firms (e.g. Mowery *et al.*, 1996). In a communications model, knowledge is treated as an object that is created, packaged and moved in an unchanged form from one unit to another (Hislop *et al.*, 1998). However, in the present study, knowledge is seen as context-dependent. Its diffusion points to sharing of knowledge across company lines. The concept of 'diffusion' explains "how new ideas are communicated and why some ideas are chosen (or rejected)", or why so many ideas fail during implementation or generate unanticipated consequences (ibid., p. 429). It is well-suited to explaining the locally situated sense-making process of technical and organisational knowledge acquisition.

The introduction of 'new' work systems by management at the adopter firm is labelled theoretically and empirically in this study as the implementation process, whilst the routinisation or institutionalisation of work systems by workers is analytically understood as the internalisation process. More specifically, the internalisation process refers to the acceptance and approval by employees of a practice that is infused with value (Kostova,

1999). For example, Abrahamson and Rosenkopf (1993:492) argue that “with increases in the number of organisations making independent problem-solving decisions to adopt an innovation, the innovation becomes increasingly ‘infused with value beyond the technical requirements of the task at hand’ (Selznick, 1957:17)”. In other words, many organisations adopt an innovation, based not on individual organisation’s assessment of this innovation’s efficiency or returns, but on what is considered legitimate for organisations to use this innovation. In an empirical sense, internalisation is understood as the acceptance by workers of the tacit principles of continuous improvement schemes.

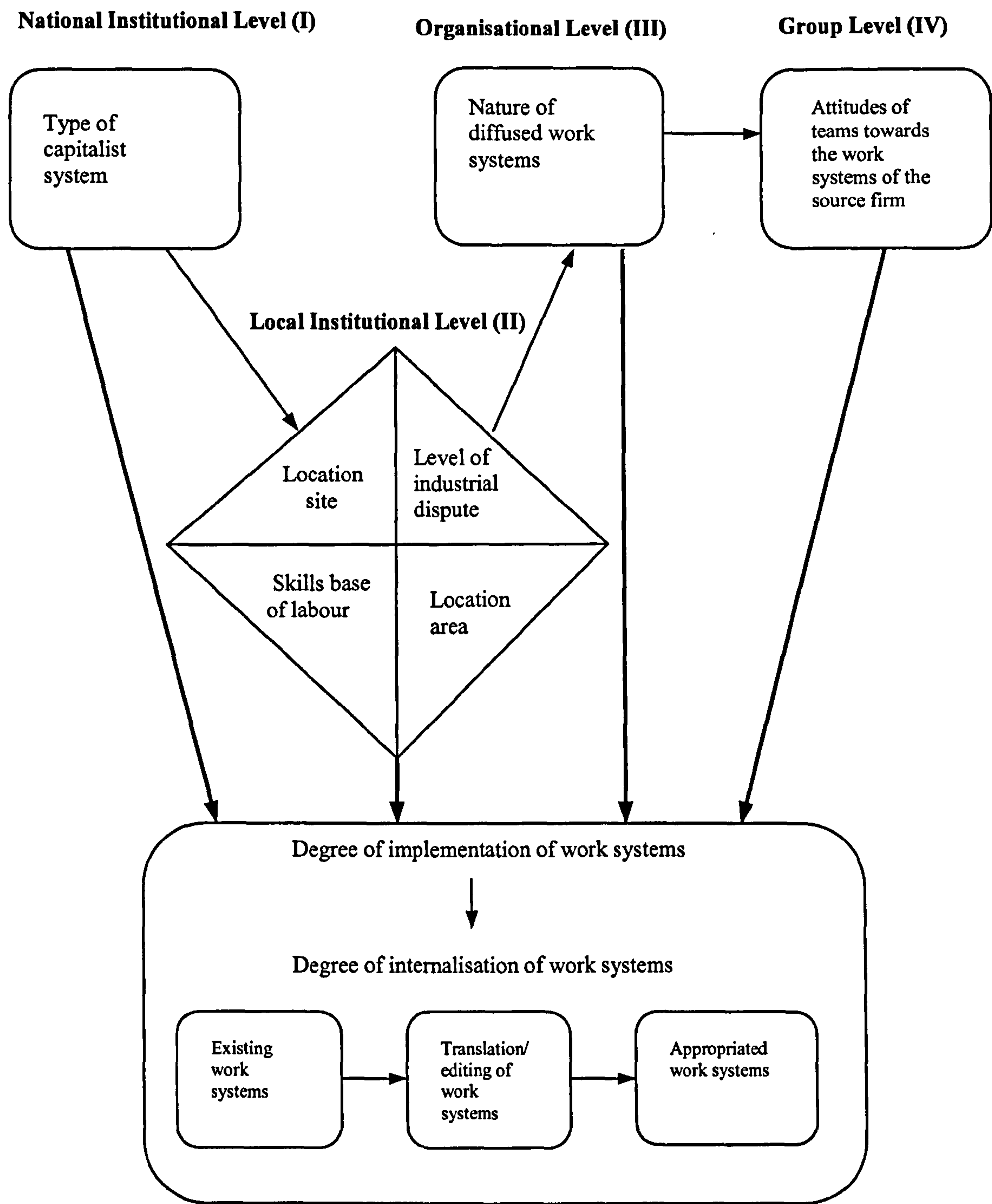
It is expected that higher levels of implementation of a particular work system will be associated with higher levels of internalisation of that work system. The concept of appropriation itself reflects this cumulative and progressive transformation of work systems. Where the alternative work system is incompatible with the existing practices, one would expect problems in internalisation (Swan and Clark, 1992). It is also possible that although a work system is formally implemented, employees may not infuse it with value by developing positive attitudes towards it. On the whole, a focus on the degree of internalisation of work systems can provide important insights into the problems of diffusing alternative work systems (see Figure 2.1 on page 68 for a pictorial representation of the implementation and internalisation process).

2.3 Summary of the Analytic Framework

In the previous sections of this chapter, key attributes of work systems diffusion and the relevant key national and local institutional, organisational and group characteristics

(which were presented as the building blocks of the analytic framework) that are likely to influence the diffusion process have been identified and discussed. These building blocks are integrated below into a single analytic framework (see Figure 2.3). This framework, in turn, is used to formulate five propositions in Chapter 3.

Figure 2.3 Analytic Framework



Source: See text

Figure 2.3 shows the impact of the key national institutional, local institutional, organisational and group characteristics on the degree of implementation and internalisation of work systems. The structural elements, such as the type of capitalist system, location site, nature of diffused work systems and attitudes of teams towards the work systems of the source firm, are complemented with a process element, that is the process of internalising work systems. It is proposed in this figure that the institutional variation at the national and regional levels can have an impact on the implementation and internalisation of work systems. Similarly, at the firm level, the nature of work systems that are diffused and the group level attitudes of members towards the work systems of the source firm can positively or negatively influence the process whereby work systems are implemented and internalised.

The nature and the likely influence of key institutional, organisational and group characteristics have been addressed separately in this chapter, but it should be emphasised that it is their combined impact that needs to be taken into account if an analysis is to be made on the diffusion of work systems. Moreover, the likely influence of the suggested characteristics should not be taken as a straightjacket for the analysis. Rather, the figure serves as a schema for data analysis.

The application of the framework in a comparative analysis implies the following steps. First, data are gathered on the structural and cultural legacies of different countries (the UK and Japan). Then, the characteristics of each local institution are determined. Next, attributes of work systems, including nature of practices in each firm, are identified. This

is followed by the identification of group characteristics. Finally, the elements in the framework are analysed in connection with each other, and the key (national and local) institutional, organisational and group characteristics are compared and contrasted to gain insights into the link between these characteristics and the extents of implementation and internalisation. The application of the framework is discussed in the following chapter.

In sum, the historical neo-institutional perspective has been refined in the following manner. First, the processes that underlie the implementation and internalisation of work systems, acknowledging the role of actors, are made explicit. Second, detailed specifications of the implementation and internalisation processes at the firm level have been called for in support of an analysis at the national level. Third, local institutional characteristics have been taken into account in the operationalisation of institutional variation across firms.

2.4 Summary

In this chapter, the concept of ‘work systems’ has been defined and discussed. Work systems are understood as driven by people’s knowledge, ideas and suggestions and founded on harnessing knowledge at the point where products are made and services are delivered. Both the structural and processural aspects of work systems are addressed.

On the basis of a review of comparative research approaches, specifically the labour process and lean production perspectives within the ‘Japanisation’ literature, the user-oriented perspective within the innovation processes literature and the historical neo-

institutional perspective within the neo-institutional literature, it has been indicated in this chapter that the diffusion of work systems is influenced by host country's legitimated structures and cultural understandings. Research concerning the institutional embeddedness of work systems has been discussed with particular reference to Whitley's divergent capitalisms view within the historical neo-institutionalist outlook on diffusion of work systems. From the six types of ideal business systems (fragmented, co-ordinated industrial district, compartmentalised, state organised, collaborative and highly co-ordinated), the present study focuses on the 'highly co-ordinated' and 'compartmentalised' business environments, which reflect the Japanese and UK contexts respectively. It is argued in this chapter that nationally distinct societal environments of highly co-ordinated business systems allow for limited diffusibility of work systems to other institutional environments. In contrast, competences of compartmentalised business systems are seen as more mobile across borders due to the absence of obligational ties to other actors in such systems. The impact of key national and local institutional, organisational and group characteristics on the diffusion process is discussed in an effort to construct an analytic framework that can guide the present study.

CHAPTER 3

APPLICATION OF THE ANALYTIC FRAMEWORK

In this chapter, the application of the analytic framework, constructed in Chapter 2, is discussed. The process of work systems diffusion is examined within Anglo-Japanese collaborations. The Japanese and UK contexts are discussed as nationally distinct social settings with specific organisational structural and cultural legacies. For this purpose, detailed descriptions are provided for each country relating to the nature of HRM systems or employment practices, such as the following: reward systems and employee governance, workplace relations and task organisation and control or structural forms. The variation in the structural and cultural legacies between the two countries is shown to hinder the diffusion of 'new' work systems. A discussion of the institutional limits to the diffusion of work systems at the national level is followed by an outline of the difference in emphasis placed on tacit and explicit knowledge in Japan and the UK. The resulting insights on work systems diffusion are related to the analytic framework to formulate a set of propositions with regard to the influence of institutional, organisational and group characteristics on the implementation and internalisation of knowledge-driven work systems.

3.1 Limits to Diffusion of Work Systems

As was discussed in Chapter 2, the diffusion of work systems can be influenced by the variation in the institutional settings of the source and adopter firms. This section discusses the difficulty in the diffusion of work systems, specifically from the Japanese

context to that of the UK. The present study conceptualises two levels of embeddedness²² in explaining the difficulty in the diffusion of work systems: one at the macro level and the other at the micro level. Macro-level embeddedness addresses the nationally distinct characteristics of social institutions, such as the legitimacy of Japanese and UK business systems, including structural characteristics of organisations and HRM systems. Micro-level embeddedness addresses the emphasis on the tacit nature of the diffused work systems. These are considered next.

3.1.1 Embeddedness at the National Level: Structural Legacies of Organisations

Organisational Structural Legacies of Japan

Dominant practices in relation to specific areas, such as reward systems and employee governance in Japan, combine to form distinctive configurations. The presumed commitment and motivation advantage enjoyed by Japanese manufacturers over their Anglo-Saxon counterparts is said to emerge from a distinctive set of organisational structures and employment systems that characterise the Japanese workplace (Lincoln and Kalleberg, 1990). Bureaucracy and paternalism are synthesised (Nakane, 1970 in Kubo *et al.*, 2001; Clark, 1979; Hill, 1981) and welfare corporatism is advocated (Dore, 1973). This is also viewed as a combination of ‘learning bureaucracy’ and ‘democratic Taylorism’ (Adler, 1992). The internal labour-market developments in Japan are seen as allowing for greater informal participation in decisions, compared with Anglo-Saxon plants. The collectivist values and tightly-knit networks of Japanese society (Yoshimura

²² The definition of embeddedness is provided in Chapter 2.

and Anderson, 1997)²³ are believed to encourage low strike activity, absenteeism and turnover, as was discussed in Section 2.1.3.4.2, under Highly Co-ordinated Business Systems in Chapter 2 (see Oliver and Wilkinson (1992:53) for a historical analysis).

According to Morgan *et al.* (2000a:11), “Japanese firms in general tend to be the least diversified; they concentrate on a particular range of skills and competences around specific technologies and markets”. Their subsidiaries are highly integrated into the Japanese headquarters. Unlike Anglo-Saxon firms’ preference for ‘flat’ organisational structures and greater diversification, Japanese organisations are seen as having thickly populated vertical hierarchies and proliferating work units, which break up occupational and class loyalties while encouraging the formation of organisation-wide cohesive bonds (Besser, 1996; Liker *et al.*, 1999).

A key feature of Japanese firms is believed to be their commitment to small-group activities (Cole, 1979). It is believed that their history of nationalism led them to design organisations in which the core values of Japanese culture, such as group orientation, harmony, loyalty, respect for age and authority, were protected. Team-level sharing, as in quality circles and new model changeover teams, is said to strengthen factory knowledge-creation capabilities (c.f. Fruin’s 1997 study of knowledge works at Toshiba). It is argued that these activities enhance knowledge sharing through ‘socialisation’ (Nonaka and Takeuchi, 1995)²⁴, and create a “sense of belonging, involvement and participation”

²³ These characteristics do not necessarily resonate an emotional bond. Rather, there is dependence on others with the expectation that they will behave in accordance with the given code of conduct.

²⁴ This is illustrated by Matsushita’s Home Bakery team. “At Matsushita, team members apprenticed themselves to the head baker at Osaka International Hotel to capture the essence of kneading skill through

(Liker *et al.*, 1999:11). However, it should be noted that this participation is more operational than strategic (e.g. Turnbull and Delbridge, 1994; Delbridge, 1995). Such involvement takes place within a context of high vertical hierarchy, formalisation and standardisation in production systems (Yoshino, 1968). However, this type of hierarchy differs from that found in British firms. Liker *et al.* (1999) argue that there is relatively limited coercive rationale that produces efficiency at the expense of worker commitment, flexibility and improvement momentum in the Japanese hierarchy.²⁵

Overall, as was explained in Chapter 2, the Japanese business system is classified as 'highly co-ordinated', with a considerably reliable legal system, co-ordinating and developing state, bank (credit)-based financial system, limited public training system, highly paternalist authority and limited union strength (Whitley, 1999b; 2000a).

Organisational Structural Legacies of the UK

In contrast to a synthesis of bureaucracy and paternalism commonly observed in Japan, there are "fewer supervisory contacts, less worker control, and a poorer quality of supervisory and co-worker relations in the West" (Lincoln and Kalleberg, 1990:233). It is argued that the structural differentiation or pronounced differences among managers,

bodily experience" (Nonaka and Takeuchi, 1995:85).

²⁵ In spite of the arguments for the distinctive architectural features of Japanese firms, it should be noted that Japanese organisations are fundamentally not different in their multidivisional structural features from their European counterparts. Historically, similar to European firms, they displayed a clear, top-down structure organised around functions. With the "presence of successful U.S. multinationals, largely organised around the multidivisional structure" in Europe and the role of consulting firms, there was a spread in the multidivisional form in Britain (McMillan, 1996:217). The shift to this structure was much slower in Japan. According to Suzuki (1980), only 56 per cent of top 100 Japanese firms had adopted the divisional structure, as compared with the 72 per cent in Britain, by the mid-1960s. Nevertheless, 'similarities' in macro-organisational features in Japan and the UK are exposed to the influence of different traditions and interpersonal relations or meso-level organisational features. Hence, the way in which multidivisional structures operate in the two countries differ.

supervisors and workers do not encourage teamwork. The form of bureaucracy found in traditional UK firms is seen as different from that of Japanese firms, in that it is designed for the purpose of control. According to Liker *et al.* (1999), its features, such as procedures and standards, serve to control performance standards. The organisational structures in the UK business system are claimed to be marked by 'flatter and fatter' hierarchies, due in part to the fact that promotion and pay are based on merit (Besser, 1996).²⁶ The business behaviour, based on individualism in the UK (Casson *et al.*, 1996), is likely to lead to adverse competitive behaviour among firms. Strike activity, absenteeism and turnover have traditionally been expected occurrences (Lane, 1996).²⁷ Management's desire for control over many key operating decisions, and the many symbolic differences between workers and managers, have reinforced an adversarial workplace, whereby management-employee relations are said to be restrained (McMillan, 1996).

Overall, as was explained in Chapter 2, the UK business system is identified as 'compartmentalised', with a reliable legal system, regulative state, financial system based on a capital market, weak public training system, low paternalistic authority and low union strength (Whitley (1999b:61), see Table 3.1 for a comparison of the types of business environments in Japan and the UK).

²⁶ On the other hand, as detailed in Section 3.1.2, the Japanese management system is seen as upholding a seniority-based pay system as a means of developing core employees (Sako and Sato, 1997).

²⁷ For example, the development and retention of Anglo-Saxon managers in Japanese transplants overseas is seen as a serious problem (e.g. Kenney and Florida, 1993).

Table 3.1 The National Institutional Features Associated with Types of Business Systems in Japan and the UK

Types of Business System/ Key Features	Highly co-ordinated (such as Japan)	Compartmentalised (such as the UK)
Authority Relations	Highly paternalist	Contractual
State	Co-ordinating and developing	Regulative
Legal system	Considerably reliable	Reliable
Financial system	Bank (Credit)-based	Capital market
Public training system	Limited	Weak
Union strength	Limited	Low

Source: Adapted from Whitley (2000a and 1999b:60)

3.1.2 Embeddedness at the National Level: Cultural Legacies of Organisations

Organisational Cultural Legacies of Japan

Some of the work processes which differentiate East Asian work systems from many continental European ones are task specialisation, degree of worker discretion, degree of managerial control, degree of separation and segmentation between managers and workers, and degree of employer commitment to employment security (Whitley, 1999b).²⁸

It is argued that the Japanese management system allows considerable independence to individuals or work groups as to how work is conducted, and tasks are usually more broadly defined (Pascale and Athos, 1986; Fukuda, 1987; Kenney and Florida, 1995). There is an effort to secure “enhanced leverage over effort and worker compliance to boot” (Danford, 1998:41). It is also claimed that the regular Japanese employee identifies with the firm (Aoki, 1988). The characteristic of ‘groupism’ (Wilms *et al.*, 1994) is

²⁸ Please note that the discussion on organisational legacies of Japan and the UK is structured along these

widely seen as conducive to the effective running of Kaizen systems (Tolich *et al.*, 1999). The education system in Japan is said to provide “little or no tradition of independent craft or skill, so companies take on employees and train them up, in-house, entirely according to their own needs” (George and Levie, 1984:26). It is not only the leaders and facilitators of the quality control (QC) process who are trained. In Japan, years rather than hours are spent on the training of the QC members (*ibid.*).

Although Japanese workers in large organisations may have some discretion over performance, they “have very little say in what tasks they do or the conditions under which they do them” (Whitley, 1999b:90). Unlike the Taylorised system observed in the UK (Lane, 1996), the ‘paternalistic delegated responsibility’ system in Japan offers low reward differentials and segmentation between managers and workers. The world image of the Japanese in the 80s rested on, and to a large degree still rests on, “commitment, identification, and loyalty Japanese employees exhibit toward their firms, low rates of industrial conflict, absenteeism and turnover combined with higher worker productivity and production quality” (Lincoln and Kalleberg, 1990:738). These characteristics may prove difficult to replicate in the UK context, which is characterised by adversarial relations between management and workers.

It is a known practice for “Japanese employers to set out to build organisational cultures, involving high levels of worker commitment, and flexibility” (Warner, 1994:510). This model is based on three pillars: seniority wages (*nenko*), lifetime employment (*shunshi*

five dimensions, which are labelled by Whitley (1999b) as ‘characteristics of work systems’.

koyo)²⁹ and enterprise unionism (*kigyobetsu rodo kumiai*) (Morris and Wilkinson, 1995). Japanese management principles that typically emphasise the key objectives of quality and flexibility, long-term growth (Sullivan *et al.*, 1981), market share, employment security and close, trust-based relations to suppliers, customers and financiers (Lillrank, 1995:978) stand on these pillars.

In summary, the traditional Japanese system of corporate management is seen as characterised by

standardised training to ensure that everyone is of average competence, seniority-based rewards, aversion to competition and emphasis on harmony, group responsibility, and organisation at once authoritative and democratically participative. (Odaka, 1986:51)

These practices are claimed to create employment stability, flexible personnel policies and strong employee identification with the company (Odaka, 1986). According to Whitley (1999b:92), the Japanese work systems can be dominantly identified as ‘paternalist’, commonly observed in highly co-ordinated business systems. The Japanese institutional context is seen as combining low levels of job fragmentation, high employer commitment to employment security, considerable worker involvement and managerial control of work organisation, and relatively low separation of manager from workers (*ibid.*). Although such employment practices are currently in a state of change, triggered by the Asian financial crisis of the early 1990s, they are still seen as having positive

²⁹ Lifetime employment is seen as having positive implications for skills development and labour turnover (Dickens and Savage, 1988).

implications for participative, hands-on management; commitment to continuous improvement activities; team work and on-the-job training; and technical advancement³⁰ (McMillan, 1996). Although Casson *et al.* (1996:40) claim that “just as the Post-modern firms have striven to assimilate Japanese methods to an individualistic environment, so in the post-war period leading Japanese firms have been assimilating US business methods to a much more organic environment”, there are few indicators that speak of any ‘radical transformation’ in the Japanese workplace at this point (Dirks *et al.*, 2000). Proposals to rejuvenate Japanese firms by introducing individual initiative, clarity in job descriptions, multitrack personnel systems with distinct hiring, remuneration, welfare, training and promotion schemes serve as symbols and metaphors, rather than blueprints, that create tension or conflict between what is and what would or should be (*ibid.*). Similarly, Porter *et al.* (2000:17) contend that “there have been some calls for restructuring especially in the financial sector but no consensus on what the restructuring should look like”. For example, in a survey of large and medium-sized firms, conducted in 1993, less than 10 per cent of Japanese firms had loosened formal office presence rules for R&D workers, limiting the use of the number of working hours or input efforts in their evaluation, or had introduced performance oriented, in contrast to seniority oriented, compensation systems (KSKKK, 1994 in Dirks *et al.*, 2000:550). Moreover, “it should be noted that the practices ascribed to Japanese management are seen in a variety of non-Japanese organisations, but are more normatively accepted in Japan” (Besser, 1996:11).

³⁰ Worker and technology are not viewed as being in conflict or threat to job security in the Japanese context (McMillan, 1996).

Organisational Cultural Legacies of the UK

In comparison with the human resource practices observed in Japan, the UK system of HRM is less homogeneous across industries and sectors. Nonetheless, two general features of the system can be outlined when making comparisons with other countries: first, industrial relations in the UK have been adversarial³¹ (as was discussed in Section 3.1.1) and second, employment security is low (McMillan, 1996). Unions in Britain have traditionally had only marginal influence over hiring and firing practices (Lane, 1996). Lower employment security in Britain (Whitley, 1999b) is connected to lower investment in skills development by UK firms (Sako, 1992) and the lack of a lifetime relationship with employees (Ho, 1993; Scarbrough and Terry, 1998). “The training system is more weakly institutionalised and standardised across industrial sectors” (Whitley, 1997:256). In other words, skills training and control systems are weakly developed (Whitley, 1999b). British deficiencies in skills training have negative implications for technical co-operation and trust. Given British managers’ low level of formal education in comparison to those in strongly institutionalised contexts, such as that of Germany (Lane, 1996), there are frequent transfers for promotion between firms, as well as changing far more between functional specialisms within firms. In addition, the education level of workers has been such that the expectations of workers have been largely economic rather than social (McMillan, 1996). High managerial control and low worker discretion or involvement are seen as creating ‘them and us attitude problems’ (Oliver and Wilkinson, 1992:186). In other words, with the availability of low skill workers, management hierarchy has been enhanced and the ideological framework of ‘them and us’ has been

³¹ This is associated with the confrontational nature of management-worker relationships in the UK (e.g.

reinforced. Such an ideological framework can limit the extent to which commitment among the UK workers can be attained.

According to Whitley (1999b), the UK work system can be dominantly identified as a ‘Taylorist’ one, commonly found in compartmentalised business systems. In summary, it can be argued that the UK system “combines high levels of job fragmentation, managerial control over task performance and work organisation, strong manager-worker separation, and low employer commitment to employment security” (ibid., p. 92, see Table 3.2 for a comparison of the types of work systems in Japan and the UK).

Table 3.2 Types of Work Systems in Japan and the UK

Characteristics	Paternalist (such as Japan)	Taylorist (such as the UK)
Task fragmentation	Low	High
Worker discretion and involvement	Considerable	Low
Managerial control of work organisation	Considerable	High
Separation of manager from workers	Variable	High
Employer commitment to employment security for core workforce	High	Low

Source: Adapted from Whitley (1999b:92)

As with the categorisation of business systems characteristics (in Table 3.1), only dominant characteristics of work systems are highlighted in Table 3.2. Although the operationalisation of the ‘paternalist’ and ‘Taylorist’ typologies is static, it is useful in

Maurice *et al.*, 1980).

providing a general picture, in relative terms, of the dominant forms of work systems in different national contexts.

3.1.3 Embeddedness at the Firm Level

It is argued that there is a difference in the emphasis placed on explicit and tacit knowledge in Japan and the UK. Work practices can be considered as highly tacit in Japan, whilst they can be regarded as of lower tacitness in the UK (Inkpen and Dinur, 1998). The basis for this claim rests on Hedlund and Nonaka's (1993) argument that "Western firms lose much of their potential for knowledge creation by overemphasising explicit knowledge and the development of complex managerial hierarchies, systems and standardisation" (Inkpen and Dinur, 1998:457). Emphasis on tacit knowledge in the UK is overshadowed by the importance given to relatively more easily diffusible explicit knowledge (Takeuchi, 1998). This is partly evidenced by the Anglo-Saxon firms' propensity to jump on fashion bandwagons (e.g. Abrahamson, 1996).

Emphasis on Tacit Knowledge in Japan

Japan is perceived as emphasising tacit knowledge and the process of creating new knowledge with the involvement of everyone (Nonaka and Takeuchi, 1995; Takeuchi, 1998). In this context, communication is seen as an integral part of the knowledge diffusion process. It is argued that Japanese firms focus on the 'soft' dimension of management that is skills, staff, style and superordinate goals, rather than strategy, structure and systems (Pascale and Athos, 1986). Similarly, Nonaka and Johansson (1985) argue that it is 'natural' for Japanese firms to demonstrate an environment of

organisational learning, given Japanese management's consensus decision-making process that facilitates knowledge sharing and on-the-job and continuous education (as discussed in Section 3.1.2). Many of the knowledge diffusion issues "come down to finding effective ways to let people talk and listen to one another" (Davenport and Prusak, 1998), and this is said to be provided by the Japanese context (e.g. Nonaka and Takeuchi, 1995). The organisation in the Japanese context is perceived as a 'living organism' (c.f. Morgan, 1986 for a definition) pursuing continuous innovation.³² According to Takeuchi (1998), Japanese emphasis rests on the importance it places on the 'whole personality', rather than the mind alone. There is no dualism between the knower and the known.³³ Hence, there is an attempt to keep the human element of knowledge production alive.³⁴ There is an organisational, rather than a market, orientation to skills development in Japan. There are rules and hierarchies governing employer-employee relations within a plant or corporation (McMillan, 1996). Consequently, skills profiles are developed internally through corporate training policies. "A high degree of homogeneity of markets and skills, together with distinctive employment practices, traditionally have linked together to facilitate high commitment to the enterprise as a whole" (Sharpe, 2001:197). Internally developed incentives for training, commitment and turnover render work systems in Japan highly tacit.

Iwata (1982:iii) argues that given the high level of institutionalisation of the Japanese

³² This is contrasted, by Munakata (1998), with the mechanistic organisations in the US.

³³ The different forms of knowledge in Japan and the 'West' are claimed to be dictated by the intellectual traditions of Zen Buddhism and Cartesian dualism (Takeuchi, 1998). The former is based on the principle of "the oneness of the body and mind", whilst the latter is founded on the argument that "true knowledge can be obtained only by the mind, not the body" (ibid., p.7; also see discussion of East-West managerial mindsets in Chia, 2000).

³⁴ This avoids the degeneration of knowledge production into a fad (c.f. case studies in Scarbrough and

practices, “it is rather doubtful whether Japanese-style management can be transplanted as it is to other countries”. Hybrid solutions are common where Japanese belief systems, which are not readily compatible with those in compartmentalised business systems, are diffused to Anglo-Saxon contexts (c.f. Taylor *et al.*, 1994; Mair, 1998b). For instance, QCs, JIT delivery, teams and suggestion programmes, which are interdependent within an entire system of a strongly institutionalised context, as that of Japan, can produce vastly different results when taken out of context.

Emphasis on Explicit Knowledge in the UK

In comparison with the Japanese, UK managers tend to focus more on explicit knowledge that can be measured and managed by a selected few who carry out knowledge initiatives (Takeuchi, 1998). According to Takeuchi (1998:6), “there is a long philosophical tradition in the West of valuing precise, conceptual knowledge and systematic sciences, which can be traced back to Descartes”. This is the type of knowledge that can be processed by a computer, transmitted electronically and stored in databases and, hence, is equated with information technology in the ‘West’ (Spender, 1996). Its diffusion can be characterised as objectified mode of knowledge communication (Scarbrough, 1995). The focus on this mode of communication in the UK is in contrast with Japan’s emphasis on informal, ‘on-the-job’ knowledge³⁵, stored in people’s brains, found in networks of social relations (Nonaka and Takeuchi, 1995), and communicated in a sedimented mode

Swan, 1999).

³⁵ The ‘gradualist’ ideas derived from factory experiences exemplify this point well (e.g. Hull *et al.*, 1985). The use of the word ‘gradualist’ serves to distinguish between the ‘incremental’ innovation approach, adopted by, for instance, Japanese companies and the ‘radical’ or great-leap’ innovation approach upheld generally by Anglo-Saxon companies (Imai, 1986:23).

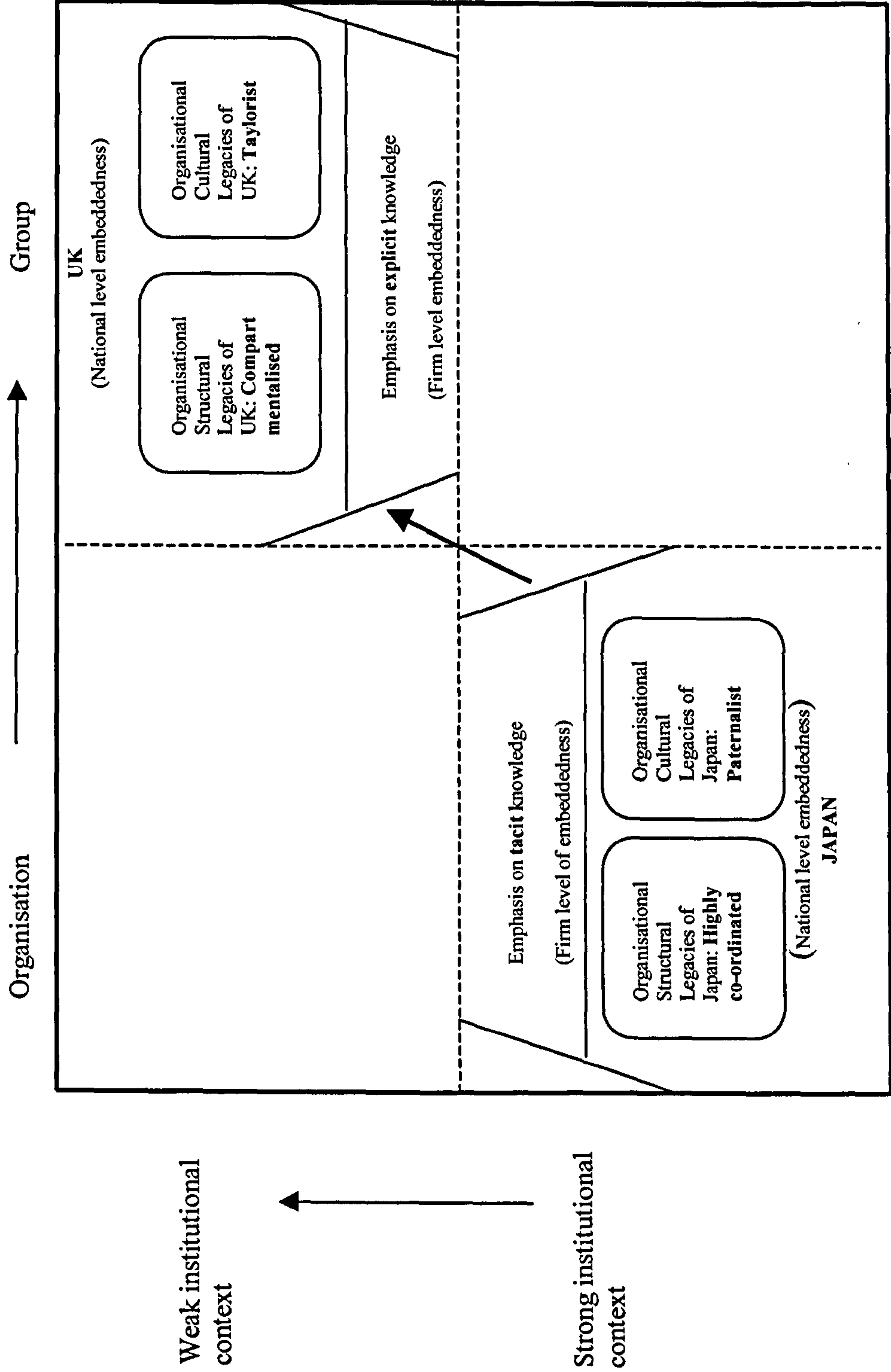
(Scarbrough, 1995). The emphasis of the UK firms on explicit knowledge (Hedlund and Nonaka, 1993; Boisot, 1995) reflects the bias towards the easier of the two kinds of knowledge to measure, control and process, as such knowledge is not categorised as highly subjective, personal and cognitive that requires interaction through the actions of individuals. It is argued that, unlike the case in Japan, knowledge in the UK is not created by the “interaction of frontline employees, middle managers and top management with middle managers in line positions playing the key synthesising role” (Takeuchi, 1998:9). Knowledge is, rather, managed by a few key players in staff positions, including information processing or internal consultancy. This, in line with the Cartesian separation between mind and body, reflects the goal of economising on “immediate truth-seeking, identity-location and affirmation,...universalism, unambiguity, logical precision, rightness, method and principles as the guiding axioms of good managerial practice” (Chia, 2000:7). It is argued that such an approach cannot capture “the dynamic and richly-textured nuances of social exchanges in Eastern settings” (ibid.). Firms under highly competitive external labour markets tend not to invest in general training due to the risk that workers can leave. Rather, they pay trained individuals market wages in a competitive labour market (McMillan, 1996). Consequently, markets that are governed by supply/demand conditions in the economy at large encourage selection and screening policies that do not have to be too sophisticated (ibid.). A worker can be laid off or may transfer if the economic contract turns out to be unfavourable. The external labour market approach to skills development render work systems in the UK highly explicit.

The emphasis on explicit or objectified mode of knowledge in the UK business system

falls in alignment with the work systems characteristics of Taylorist organisations. Explicit knowledge “tends to generate a unified and predictable pattern of behaviour and output in organisations” (Lam, 1998:10) that encourages high levels of managerial control and low levels of worker involvement in decisions. (This corresponds to the third characteristic in Table 3.2). The codification of knowledge, or its abstraction from social networks, tends to reduce investment in personal interaction or sharing of tacit knowledge. This implies a ‘high’ separation of managers from workers in Taylorist organisations (see the fourth characteristic in Table 3.2). In line with the principles of Taylorism, complex social or team relationships tend to be given limited attention in the codification of workers’ experiences, or formalisation of work roles and procedures by the UK firms. This relates to the UK business system’s low institutional embeddedness, or weak institutional context, in comparison to that of Japan.

The impact of the embeddedness of Japanese knowledge-driven work systems at the national institutional and the firm levels on their diffusibility can be seen in Figure 3.1. This figure highlights the contrasting nature of the two levels of embeddedness in Japan and the UK.

Figure 3.1 The Impact of National Institutional and Firm Levels on Work Systems Diffusion



Source: See text; figure structure adapted from Inkpen and Dinur (1998:457)

It is assumed here that the nationally distinct nature of the institutional environment in which automotive manufacture firms in Japan are embedded has facilitated the development of a highly co-ordinated structure and a paternalist culture. The facilitating nature of considerably reliable legal system, paternalistic authority relations, co-ordinating and developing state, credit-based financial system, limited public training system and limited union strength in addition to low task fragmentation, considerable managerial control of work organisation and high employer commitment to employment security (see Tables 3.1 and 3.2) that apply to Japan's institutional environment form a cohesive system of mutually reinforcing influences. This institutional environment also encourages emphasis on tacit knowledge. The 'strong institutional context' in Figure 3.1 represents the highly co-ordinated business system characterised by a network of mutual obligations and commitment. Within such a context, predominant economic relationships are paternalist and the sectors cohere strongly.

In contrast with the national institutional features of Japan, the UK context is characterised by a compartmentalised structure and a Taylorist culture. Nationally distinct key influences include a reliable legal system, contractual authority relations, regulative state, capital market-based financial system, limited public training system and low worker involvement, high separation of managers from workers, high managerial control and low employer commitment to employment security (see Tables 3.1 and 3.2). This institutional context encourages emphasis on explicit knowledge. The 'weak institutional context' in Figure 3.1 represents the compartmentalised business system characterised by work systems that are not strongly embedded in social networks of close

co-operation and high interdependency. Predominant economic relationships are Taylorist. Such a system does not bear the institutional support necessary for a long-term orientation to developing competencies.

Figure 3.1 shows the diffusibility of work systems from a strong institutional context, such as that of Japan, to a relatively weak one, such as that of the UK. The figure implies that work systems become *less diffusible* as they are moved from highly co-ordinated structural legacies and paternalist cultural legacies at the macro level³⁶, and high knowledge tacitness at the firm level in Japan to a context characterised by compartmentalised structural legacies and Taylorist cultural legacies at the macro level, and low knowledge tacitness (or high knowledge explicitness) at the micro level in the UK.

3.2 Propositions

The analytic framework constructed in Chapter 2, complemented with the discussion in the above sections, forms the basis of the propositions on the influence of key institutional, organisational and group characteristics on the implementation and internalisation of Japanese knowledge-driven work systems.

³⁶ Rosenzweig and Nohria (1994) claim that the greater the socio-cultural difference between MNCs (i.e. the cultural distance between the parent company and the host country), the more likely it is for the local adaptation of, for instance, HRM practices to local interests and diversity. The authors argue that the method of founding, presence of expatriates, extent of communication with the parent company can limit the adoption of parent companies' work systems.

As was pointed out earlier (in Sections 2.2.1.1 to 2.2.1.3, Chapter 2), favourable key characteristics are likely to have a positive impact on the degree of implementation and internalisation. In contrast, if a firm is embedded in an environment with unfavourable key characteristics, a low degree of implementation and internalisation of knowledge-driven work systems is expected to be observed. In Section 2.2.1, favourable and unfavourable key characteristics were discussed separately in their link to the degree of implementation and internalisation of Japanese knowledge-driven work systems under the following headings: the influence of key institutional characteristics, the influence of key organisational characteristics, and the influence of key group characteristics. This discussion is summarised here in the form two institutional settings that can be identified as contrasting in nature. In an attempt to formulate propositions, these institutional settings are taken to represent two extreme points of a scale, ranging from ‘favourable’ to ‘unfavourable’ (see Table 3.3). It should be noted that ‘intermediate’ settings can also prevail in between the two extremes.

Table 3.3 Contrasting Institutional Settings³⁷



Favourable key characteristics in the implementation and internalisation of Japanese work systems	
National institutional level	Highly co-ordinated structural legacy Paternalist cultural legacy
Local institutional level	Location on a greenfield site Location in a centre for service Large supply of unskilled workers Low level of industrial dispute
Firm level	Emphasis on tacit knowledge Emphasis on cultural and control-related practices
Group level	High level of commitment

'Intermediate' institutional settings

Unfavourable key characteristics in the implementation and internalisation of Japanese work systems	
National institutional level	Compartmentalised structural legacy Taylorist cultural legacy
Local institutional level	Location on a brownfield site Location in a centre for manufacturing Small supply of unskilled workers High level of industrial dispute
Firm level	Emphasis on explicit knowledge Emphasis on structural and technological practices
Group level	Low level of commitment

Source: See text

³⁷ This scale represents two ideal points where all the suggested key characteristics are assumed to form a tightly-knit coherent whole to represent two opposing institutional settings.

On the basis of the scale in Table 3.3 that reflects the expected degree of implementation and internalisation of Japanese knowledge-driven work systems in connection with a set of favourable and unfavourable key institutional, organisational and group characteristics, five propositions can be formulated. The first two propositions are formulated on the basis of the two extreme points of the scale, reflecting the impact of the favourable and unfavourable institutional settings on the implementation and internalisation of work systems. The three remaining propositions reflect the institutional settings and degrees of implementation and internalisation of Japanese knowledge-driven work systems that are likely to be found in between the two extremes.

Proposition 1

Affiliates of firms in highly-institutionalised environments that are operating in unfavourable institutional settings (as those delineated in Table 3.3) are likely to exhibit a low degree of implementation and internalisation of Japanese work systems.

Similarly, a second proposition can be made to reflect the opposite argument.

Proposition 2

Affiliates of firms in highly-institutionalised environments that are operating in favourable institutional settings (as those delineated in Table 3.3) are likely to exhibit a high degree of implementation and internalisation of Japanese work systems.

Propositions can also be made to take into account the less tightly-knit institutional settings that may have an impact on the degree of implementation and internalisation of knowledge-driven work systems.

Proposition 3

Affiliates of firms in highly institutionalised environments that are operating in settings in which unfavourable key institutional, organisational and group characteristics are more dominant than the favourable ones are likely to exhibit a low degree of implementation and internalisation of Japanese work systems.

The counter-argument is as follows;

Proposition 4

Affiliates of firms in highly-institutionalised environments that are operating in settings in which favourable key institutional, organisational and group characteristics are more dominant than the unfavourable ones are likely to exhibit a high degree of implementation and internalisation of Japanese work systems.

There is also the possibility that a high or low degree of implementation and internalisation of work systems is attained in settings that lack the dominating effect of the favourable or unfavourable key institutional characteristics.

Proposition 5

Incoherent pattern of high and low degree of implementation and internalisation is likely to develop in settings which lack key institutional, organisational and group characteristics that are favourable or unfavourable.

These five propositions further clarify the aim of the field study described in Chapter 5. The research findings are fed back to the propositions formulated here in Chapter 6.

3.3 Summary

In this chapter, limits to diffusion of work systems are discussed in terms of their embeddedness at the macro national and micro firm levels. The variation in the organisational structural and cultural legacies of Japan and the UK are shown to affect the diffusibility of work systems. Similarly, the difference in emphasis placed on tacit and explicit knowledge in Japan and the UK has an impact on the extent to which work systems can be diffused. It is argued that work systems become less diffusible as they are moved from highly co-ordinated structural legacies and paternalist cultural legacies at the macro level, and high knowledge tacitness at the firm level in Japan to a context characterised by compartmentalised structural legacies and Taylorist cultural legacies at the macro level, and high knowledge explicitness at the micro level in the UK. Five propositions are formulated on the basis of a scale ranging from favourable to unfavourable institutional settings and their impact on the degree of implementation and internalisation of work systems.

CHAPTER 4

RESEARCH METHODOLOGY

This chapter concerns the methodological aspects of this study: that is, where and how the research project was carried out, so as to arrive at answers to the central research question. The criteria used to select firms for the case studies are addressed. Moreover, attention is paid to the data collection and analysis process involved in the comparison of three Anglo-Japanese cases in the automotive sector. The chapter concludes with a discussion of research quality issues, specifically the reliability and validity of the outcomes, which are seen as applicable to both qualitative and quantitative research.

4.1 The Research Process

A comparative study of three affiliate firms of Japanese MNCs operating in the UK (i.e. two subsidiary firms and a technical collaboration) was conducted in order to gain insights into the influence of nationally distinct social institutions on the implementation and internalisation of alternative work systems. The cases involve detailed descriptions of the characteristics of the work-systems diffusion process at the local firm level. They consider key institutional, organisational and group characteristics that are likely to have an impact on the diffusibility of work systems across nations.

As was addressed in Chapter 1, the automotive manufacture sector forms the setting for this empirical research. The data collection and analysis processes that allowed for a

comparison of the cases are outlined in Table 4.1. It should be noted that the process presented in the table is by no means a clear-cut, linear one. It is rather a value-laden, iterative process that reflects the constant shift between theory and practice. Theory informs practice or the way the empirical work is carried out, and the research results are fed back into theory to further develop it.

Table 4.1 Outline of the Research Process

List of activities	
Theory	Practice/Empirical work
Exploration of arguments in the innovation processes and neo-institutional literatures	
Construction of an initial conceptual framework	Exploration of research sites, negotiation of access
Development of an interview protocol	Data collection at one of the subsidiary firms
Revision of the conceptual framework	Data collection at the technical collaboration site
Exploration of arguments in the Japanisation literature	Data collection at the second subsidiary firm
Case write-up	Factory work in the two subsidiary firms
Revised case descriptions; Further readings on neo-institutionalism	Further data collection through a visit to Japan
Data processing/ comparative analysis of the cases	Feedback from the respondents on the analysis ³⁸
Final revision	

Source: See text

The research process comprised sixteen major stages. It began with a review of the literature on neo-institutional theory and innovation processes literature (stage 1). In the meantime, research sites were explored (stage 3). This consisted of interviews with five

³⁸ The respondents were contacted throughout the data collection process for feedback on preliminary research results. This was an ongoing process, and is partly reflected in the duration of the data collection process that has spread over a period of two years, from August 1998 to April 2000.

MDs, a company secretary and a general project manager at five Anglo-Japanese joint ventures and two UK subsidiaries of Japanese MNCs, see Appendix I for an overview of the organisations involved in the explorative stage of the research). These preliminary interviews were useful in identifying the practitioner-perceived key concerns in managing cross-national collaborations, especially the cultural differences as a barrier to implementing source company's practices. This explorative stage also enabled the researcher to formulate interview questions and provided access into one of the affiliate firms (a subsidiary firm coded as Teniki UK in this research). However, on the whole, gaining access to organisations proved to be longer than expected (8 months). (This is detailed in section 4.2.2). An interview protocol was developed for data collection (stage 4), and a qualitative in-depth case study in a subsidiary firm was conducted (stage 5). In this way, detailed knowledge was gained about the following aspects: structure, culture and past and recent developments of the firm; its key actors, interests, worker perceptions; and institutional characteristics that helped to create a clear view of the patterns of interaction, specific artefacts and actual practices in the firm and its wider social context. Interviews with directors and senior managers across various functions, as well as with plant personnel, were conducted. These confirmed the relevance of the initial concepts and frameworks that had been developed in stage 2 for the purpose of the study. This was followed by a case study conducted in a technical collaboration (stage 7). Data in the third company (i.e. the second subsidiary firm) were collected as the data collection in the other two sampled firms were in progress (stage 9). The interview data from the three cases were complemented with participant observation through factory work (stage 11) and a visit to parent/partner firms in Japan (stage 13). Preliminary findings from the

cases served to refine the initial conceptual framework (stage 6). Insights from the cases allowed revisions to be made to the literature review section (stages 8 and 12). Further readings on ‘Japanisation’ and neo-institutionalism better informed recursive data processing and analysis (stages 10, 12, 14 and 16). These stages are discussed in greater detail below.

4.2 Data Collection

4.2.1 *The Selection of Firms*

Data were collected relating to the degree to which Japanese knowledge-driven work systems were put to practice and accepted at two UK subsidiary firms in the automotive manufacture sector and a UK-based Anglo-Japanese technical collaboration between two major car manufacturers. The two subsidiary firms (Teniki UK and Nissera UK) were selected to include a brownfield and a greenfield site, for the purposes of comparative study. The technical collaboration (Rover-Honda) was included in the sample to test for the effect of the form of ownership on the degree to which alternative work systems were accepted.³⁹ There was an interest in observing influences other than control exercised by the parent company, which seems to be commonly observed in fully-owned subsidiaries (e.g. Skorstad, 1994; Danford, 1998; Delbridge, 1998), on the degree of internalisation of work systems. Rover provided a good example of work systems diffusion whereby its claimed successful collaboration with Honda till 1995 (e.g. Faulkner, 1995) created ‘centres of excellence’, or central specialism in the form of project teams that benefited

³⁹ The selection of a technical collaboration site also provided an opportunity to see how an existing UK firm adopted lessons from Japan and how its relations with a Japanese partner were implicated in this process. Hence, there was an effort to look beyond solely how Japanese firms operated in the UK.

from each other's experience (Ohtani *et al.*, 1997). Nissera UK, the greenfield site, was claimed to be a good example of a UK subsidiary firm that had successfully implemented Japanese work systems. Teniki UK, the brownfield site, aimed to be more market oriented and quality-conscious by adopting Japanese work systems. All of the three firms were examples of firms adopting Japanese work systems to make them work in the UK. They had adopted continuous improvement schemes from the Japanese to attain economic efficiency.

Firms involved in this study were selected according to specific criteria including the form of ownership, nature of diffused work systems, site and sector. Sites were selected to achieve variety in terms of aspects such as firm location and form of ownership. It should be noted that whilst demographic information on the cases is important for drawing conclusions, one must look beyond structural classifications to recognise each firm as representing a "unique community of people who go about their business in a distinctive setting" (Cutcher-Gershenfeld *et al.*, 1998:20). The selection of the technical collaboration case—the Rover-Honda collaboration—was mainly based on Rover's long-standing relationship with a major Japanese car manufacturer, Honda. Honda carried the image of the most innovative Japanese manufacturer in the mid-1980s. It also had the characteristic of a Japanese Total Quality Control (TQC) attitude to manufacturing. The collaboration lent itself to research as there were intensive efforts to diffuse the TQC system to Rover. This research specifically focused on a project carried out between 1985 and 1989, which constituted 'side-by-side' work rather than an 'arm's length' relationship with Honda. It was seen as the most successful project by both engineers and

managers at Rover. Similarly, the two subsidiary firms were espoused to continuous improvement in quality and reliability through a programme of total quality improvement, serving their customers' needs through a Just-In-Time delivery.

The two subsidiary firms were active in a single stage of the supply chain—assembly of car components—whereas the technical collaboration was involved in a separate stage—design, engineering, and manufacture of automobiles. Nevertheless, they had a core business, which involved the activity that they had performed since their establishment. All of the three firms were located in the automotive manufacture sector. As was discussed in Chapter 1, this sector lent itself to investigating the limits to diffusing 'Japanese best practices', for the UK automotive manufacture sector had been heavily influenced by Japanese investment, particularly in the 1980s.

Table 4.2 lists the firms that have been involved in this study. It includes information about their date of establishment, location site, core business, size, form of ownership, nature of diffused work systems and sector. There was an attempt to standardise parameters across firms for a comparison along sector and nature of diffused practices. It is recognised in this study that variation in structural characteristics across the three cases, such as company size, can influence the degree to which work systems are implemented and internalised (see Section 6.1.2.1, Chapter 6). However, an attempt is made here at highlighting the interaction between organisational members and the process of attaching meaning to alternative work systems.

Table 4.2 Firms Involved in the Study

Firm (in the order of data collection)	Year of acquisition/ commencement/ establishment	Site	Core business	Size (number of employees)	Form of ownership	Nature of diffused work systems	Sector
1	Teniki UK* Parent: Teniki Ltd. in Japan	<i>Pre-existing culture</i> (brownfield)	Carbon canister (37%) Air Intake Systems (35%) (in 1999)	<i>Medium</i> (170 in 1999)	<i>Subsidiary</i>	Continuous improvement schemes	Automotive manufacture
2	Rover R8/YY project Partner: Honda Motor Corporation in Japan	<i>Pre-existing culture</i> (traditional home of Britain's car manufacturing base)	Automobile design, engineering and manufacture	Large (37,675 in 1985, ~39,000 in 1999, similar size in terms of sales with Honda in 1978)	Technical collaboration		
3	Nissera UK* Parent: Nissera Ltd. in Japan	New culture (greenfield)	Instrument clusters for automobiles (83%) Motorcycles (13%) Construction machines (4%) (in 1999)	<i>Medium</i> (300 in 1999)	<i>Subsidiary</i>		

* Company names are pseudonyms for anonymity.

Source: See text

Both of the subsidiary firms were roughly medium-sized (170 and 300 employees respectively⁴⁰). However, the third firm differed in terms of its number of employees, being a large-sized firm. Similarly, the time span from the year of initial investment to data collection, labelled here as company age, differed across the sites (either being three or 11 years). The literature suggests that different types of firms within the same industry behave in a dissimilar fashion (e.g. Chesbrough (1998), c.f. Cutcher-Gershenfeld *et al.* (1994) in relation to the internalisation of team-based work systems). Hence, the likely impact that the differences in company size and age could have on the diffusion of Japanese knowledge-driven work systems was taken into account.

Nissera UK was similar to Teniki UK in terms of the form of ownership, company size, nature of diffused work systems and sector. However, in terms of company age (from investment to data collection), it was similar to the Rover-Honda collaboration.⁴¹ Although the Rover-Honda Collaboration was larger than the two subsidiary firms in size and operated under a different form of ownership, it was similar to Teniki UK and Nissera UK in terms of the nature of diffused work systems and sector. The Rover case had a local institutional context that was similar to that of Teniki UK, particularly in terms of site location. Rover's similarity with Nissera UK was more in terms of both companies espousing to be successful models of diffused Japanese work systems. The selected companies were not closely matched for it seemed more attractive to design a research that reflected the spread in actors' interpretation of alternative work systems. For

⁴⁰ In general, the Department of Trade and Industry (DTI, 1995b) in the UK defines a small firm as one with fewer than 200 employees and a medium-sized firm as one with 200-500 employees. Teniki UK, with 170 employees, is not defined in this research as a small-sized firm, as its historical trend (see Appendix V) does not suggest maintenance of a small size.

example, on the topic of closely matching cases, Sorge (1991:173) shows that where case studies are selected to match in pairs as closely as possible and product strategies are ‘controlled for’, there may be “tendencies in the evolution of competence requirements [to appear] to be similar in the two countries [UK and Germany]”.

As was discussed in Chapter 2, multiple levels are addressed in this study to gain an integrated understanding into work systems diffusion. If the national context alone was addressed, then one would expect similar outcomes in the levels of internalisation in each of the three cases. This would be to ignore any possible variation in the degree to which Japanese knowledge-driven work systems are internalised across firms located in the same sector within a single country.

4.2.2 The Negotiation of Access

The process of establishing contacts with companies began in mid-1997 with the dispatch of letters to 30 Japanese manufacturing companies in the UK. The list, which was compiled by the Department of Trade and Industry’s ‘Invest in Britain’ Bureau (IBB, 1995), consisted of UK subsidiaries and joint ventures classified according to region and product category. These initial letters, accompanied by a research proposal, bore requests for company documents with the aim of making the researcher more familiar with the company’s operations, in turn, creating an opportunity to follow up the letters with requests for company visits and interviews. The response rate was 50 per cent. The letters

⁴¹ In the case of the Rover-Honda collaboration, this period covers 1978 to 1989, that is the year of establishment to the end of the Rover 200/ Honda Concerto (R8/YY) project.

were directed to Managing Directors (MDs), rather than HR/Personnel Departments, for it was felt that the latter group's high level of formalisation and relatively lower level of authority could slow the process of entry into the organisations.⁴²

The second round of letters was sent within a month to the MDs who had responded positively to the first round of letters. Eight companies, which are listed in Appendix I, extended invitations for interviews, and served as participants of a pilot study. Three of the company heads—Unipart Yachiyo Technology Ltd., Unipart Yutaka Systems Ltd., and R-Tek Ltd.—were Japanese, allowing the researcher to gain Japanese perspectives on the nature of knowledge and the facilitators and inhibitors of the process of diffusing knowledge-driven work systems. These preliminary interviews demonstrated that there were indeed cultural differences between Japan and the UK, for example in the way learning was exercised, or in the techniques used for diffusing knowledge.⁴³ These interviews allowed the researcher to further refine and structure her questions.

Given their distant geographical locations, it was not possible to research two of the joint ventures, namely Ikeda Hoover and R-Tek Ltd., in detail. Moreover, the two Unipart collaborations were recent developments, having been in operation for two months at the time of establishing contact. Hence, they were in the initial stages of diffusing Japanese work systems. They also had problems with inventory control, supplies and working relations, and had to reap the benefit of their initial investment before they could commit

⁴² This proved to be justified over the course of the research, especially in the case of large, relatively more bureaucratic firms.

⁴³ For example, the interview with the MD of Unipart Yachiyo Technology Ltd. showed that the emphasis placed on employees' past experience (80 per cent, as opposed to 20 per cent placed on talent—terms used

themselves to any research.

The contact with ERA Technology (which was the UK parent company of Telecom Modus—a joint venture between ERA Technology in the UK and NEC in Japan) was maintained over a period of eight months. Meetings were scheduled with the Japanese Director of Strategy and Finance, the British Technical Director, the British Company Accountant and the British Human Resources Manager at Telecom Modus. Similarly, the MD of the sixth company in the pilot study, Hoya Lens UK Ltd., provided interviews with six managers and a process engineer that allowed the researcher to refine her research tools. Further access to Hoya Lens UK Ltd. was denied on the grounds that information critical of the company's operations was released by the process engineer.

A preliminary interview at the last company, Teniki UK Ltd., allowed further access to it.⁴⁴ Access was negotiated on the basis of monthly visits to the company over a period of six months.⁴⁵ However, a further request was made to work as an operator on the shop floor during the company's slump period of April to July 1999. This was looked upon as favourable. The same request was also directed to the second subsidiary firm, Nissera UK Ltd., when the gatekeeper expressed curiosity over the reasons for low level of motivation on the shop floor. Work experience on the shop floor was granted for a week before the shutdown period in August 1999 at Nissera UK Ltd..

by the MD himself) was greater in Japan than it was in the 'West'. The 'West' was seen as placing more emphasis on talent and performance.

⁴⁴ This seemed to be premised on the grounds of a managerial interest in the evaluation of a change programme that was underway in the organisation at the time of contact. The change programme was initiated in 1996 by the Japanese management via replacement of local management with a 'more market-oriented, quality-conscious team'.

⁴⁵ An earlier request for fortnightly visits per month had to be changed as it was found to be too time-

The key issues arising during negotiation of access were as follows: the benefit which could be afforded to the organisation (in this context, the feedback on the research findings), the amount of organisational time the research was likely to take, and the extent to which the research findings would become public through publications. Eventual publications were agreed to on the basis that the identity of the organisation was disguised and the anonymity of individuals preserved.

The use of British business contacts helped in setting up meetings with the Japanese counterparts (c.f. Glidewell, 1959 in Gill and Johnson, 1991). However, on the whole, negotiation of access proved to be time-consuming and often difficult, with the researcher lacking powerful support.

4.2.3 Justification of a Comparative Study

The cases were selected with the intention of including affiliate firms of Japanese MNCs in different local institutional sites in a comparative study. A comparative analysis was carried out in order to develop robust explanations for the internalisation of knowledge-driven work systems. A number of studies on knowledge diffusion are characterised by generalisations which are assumed to be universal but are in fact conditioned by the circumstances of time and place (e.g. Rogers, 1983). For example, Rogers' (1983) work is seen as a somewhat prescriptive supply-side model that draws a linear relationship between the supplier and the user of knowledge to be 'transferred'. Knowledge in this

consuming for the company.

context is objectified and manipulated for rapid ‘transfer’.⁴⁶ His model, which is further developed by Clark and Staunton (1989), is criticised for ignoring the embeddedness of knowledge-driven work systems in complex ensembles of routines which may inhibit or enable the firms’ ability to use diffused systems (Clark and Newell, 1993). It is argued that the diffusion process is more complex, involving political processes of the suppliers and the active involvement of the users (*ibid.*). The context-bound nature of diffusion necessitates the acknowledgement of the institutional context that shapes the internalisation of a practice in a new national system (Clark, 1987). One can discover whether one’s explanatory arguments are context-bound by investigating experience in other environments. If the experience applies in a diversity of times and places, one may assume that one has identified a robust generalisation. Otherwise, one needs to explore the situational characteristics that may explain for the differences in outcomes that tend to persist, resisting pressures to converge (Hyman, 1998). This essentially serves as a means of teasing out macro institutional influences from the micro organisational effects.

Comparative research also has a potential role in identifying ‘lessons’. For example, the appropriation of production and inventory control systems in the British context was modelled on the American vision, templates and artefacts and “diffused through a strong presence of American suppliers (e.g. IBM) and major American consultancies (e.g. Arthur Anderson)” (Clark and Newell, 1993:77). The key player in the diffusion of the system—the British Production and Inventory Control Society (BPICS)—was in fact a licensee of the American Society, APICS. A comparative study of the British and the US

⁴⁶ ‘Knowledge transfer’ is used intentionally here to reflect the linearity assumed in the diffusion of knowledge.

production and inventory control systems provided an opportunity to explain for persistent differences. It also allowed for the acknowledgement of peculiarities of each national institutional context. Such an analysis falls in alignment with the neo-institutionalist arguments, which argue for the specificities of national institutional frameworks. A comparative study is also useful for saturating categories of incidents, for it provides the opportunity to maximise differences among groups. “[Theoretical] saturation can never be attained by studying one incident in one group” (Glaser and Strauss, 1967:63). Multiple groups need to be studied.

The current research focuses on an inter-firm comparison in a single national system, with references drawn from the national context that serves as the supplier of alternative work systems. The comparative study seeks to establish and account for similarities and differences in the cases investigated. It is not a cross-national comparison, as the companies under study in Japan and the UK are not paired. Those in Japan constitute the parent or partner firms of the affiliate firms in the UK. Inevitably, parent and subsidiary firms could not be matched on age, size and technological advancement.

From a methodological standpoint, the comparative approach also aims to achieve the objective of testing and exploring the pervasiveness of uniqueness. “Paradoxically, uniqueness can only be demonstrated through systematic comparison that differentiates a country from all others as a deviant case in a given universe” (Rose, 1991 in Hyman, 1998:6). In other words, exceptionalism needs to be integrated through comparative analysis. Such an analysis also allows one to identify explanatory propositions in a

systematic manner.

Within this study, there is a focus on comparison of a process as well as institutional structures. One implication of this comparison is that elements of the given process, such as worker response to alternative work systems, may be the same across countries despite institutional differences. Hyman (1998:10) argues that “national institutions of interest representation are not appropriate units for comparative analysis, for they are differently constituted, differently experienced and differently set in motion according to specific national context”. Hence, the aim here is to highlight macro institutional and micro organisational influences on the internalisation process across sites in a specific national context.

4.2.3.1 Doing a Qualitative Case Study Encompassing Interviews and Participant Observation

The research is based on a qualitative case study of the process of internalising work systems at the firm level, drawing both on interviews and participant observation. The emphasis on knowledge-driven work systems diffusion research is on understanding the contextual characteristics that influence organisations’ decisions to adopt new ideas (e.g. Hislop *et al.*, 1998). Qualitative case studies enable one to carry out investigations where other methods such as experiments do not lend themselves to viewing the case from the perspective of those involved (Gillham, 2000). The interest in the present study is to carry out research into the processes leading to results rather than into the ‘significance’ of the results themselves. It has been argued in Chapter 2 that actors translate or interpret new ideas and use them alongside existing systems and processes (e.g. Scarbrough and

Corbett, 1992). Such sense-making processes can be more thoroughly investigated by immersing oneself in the daily activities of the research participants, made possible by participant observation. This allows one to be sensitive to the context-dependent, specific and tacit nature of the diffused knowledge-driven work systems. The richness of the context, or in Yin's (1994:3) words "the complex interaction between the phenomenon and its (temporal) context" warrants the use of a qualitative case study.

Three qualitative case studies were conducted to attain a rigorous comparison of the diffusion process. It was felt that a comparison of two subsidiary firms alone would not have provided diversity in the investigation of the likely influences on the internalisation of alternative work systems. Three cases could yield more data than two cases where flow and configuration of events and reactions influencing a particular degree of internalisation of work systems would become clear. A 'replication study' (Yin, 1994) was necessary whereby "successive cases [could be] examined to see whether the new pattern matche[d] the one found earlier [in the first case study]" (Huberman and Miles, 1998:195). At the same time, investigating more than three multilevel, in-depth case studies would become unmanageable from a practical point of view. The aim was to strike a balance between collecting data that allowed for a rigorous analysis and avoiding data overload in the field, "leading to the analysts thus missing important information, overweighing some findings, skewing the analysis" (ibid., p. 198).

The present study drew upon both interviews and participant observation. Context-dependent knowledge, which is action-oriented and based on organisational routines

(Hislop *et al.*, 1998), could not be discerned entirely through interviews. The nature of such knowledge required participation in the highly dynamic interplay of archetypes and the negotiated patterns of interaction between different groups of social actors. Under these circumstances, interviews would provide only an incomplete account of those relations and processes, and would not enable an in-depth understanding of the diffusion process and its relation to institutional contexts. This research is not only concerned with discrete taxonomies, such as structural elements, of work systems diffusion. It also aims to examine the social relations and processes in which activities are embodied (Clark and Newell, 1993).

The research focuses on participants' perceptions of continuous improvement activities and related changes in work practices and structures. The challenge here is to understand and interpret complex forms of social activity, which are defined by the actors themselves in terms of their own subjective meanings. The internal logic of participants' meaning cannot be addressed by positivist methods borrowed from the natural sciences. In order to explore the experience of the workers under the 'Japanese' model, one needs to live, act and think the specific meaning and relevance structure of the social agents (Delbridge, 1998). However, in the given research, this is not carried to the extreme of being fully immersed in the activities of a given firm and, hence, the researcher could stand back and relate the variables under observation. A weeklong participant observation, which complemented interview data, provided the opportunity to elicit adopters' perspective and examine practice (e.g. Altheide and Johnson, 1998).

The situation of the workplace relations, in this context, is of key significance. The task is to explain and understand subjects' underlying motives and meaning systems. Douglas (1976 in Gill and Johnson, 1991:109) argues that "participant observation can enable the researcher to penetrate various complex form of 'misinformation, fronts, evasions and lies' that are considered endemic in most social settings". In other words, the researcher surrenders to everyday experience but does not go native. S/he needs to come back to reflect and report upon the experience.

The nature of this study partly reflects a 'world' of social constructions in which the researcher cannot control the characteristics involved in a situation that occurs in a natural setting (Merriam, 1988). The study aims to explain through developing understanding, rather than through predictive testing. As it focuses on the actions and taken-for-granted meanings of research participants, the researcher comes closer to, rather than removed from, the data. In line with Delbridge's (1998:17) argument, the aim of this study is to seek in part "detailed description of the reality of workplace relations and to relate these findings to contemporary theory and other studies of 'empirical tendencies'". Furthermore, there is an attempt to formulate a systematic comparison of the observed peculiarities across cases.

4.2.3.2 The Interview Type and Protocol

In the present research, data were mainly gathered through interviews. Although interviews as a data collection tool can provide an answer to how context-dependent knowledge can diffuse across nations, they are not immune to respondent bias. The research responds to this bias by triangulating data through participant observation and

document analysis. This, as will be outlined in Section 4.4, is a means of establishing validity in the context of reflective accounting. Denzin and Lincoln (1998:278) refer to this process as 'analytic realism'. In Hammersley's (1992:69) terms, analytic realism aims to "represent accurately those features of the phenomena that it is intended to describe, explain or theorise".

The relevant data were gathered from multiple sources including company reports, journal articles, participant observation and interviews. In the case of the two UK subsidiary firms, part of the information drew on participant observation over one week in June and July 1999. Further information came from interviews with Japanese advisors, directors, UK team leaders, operators and managers across personnel and training, sales and marketing, product engineering, design and quality, and finance between August 1998 and January 2000. In addition, information was obtained through interviews with the Japanese managers in product development, general affairs, quality assurance, corporate finance, engineering and corporate planning and control departments at the parent companies and factory tours in Japan in April 2000 (see Appendix II for a list of interviewees at both subsidiary firms). The research questions addressed the nature of the relationship, and the division of responsibility between the Japanese MNC and the subsidiary. They also considered the means of diffusion, characteristics that facilitated and inhibited the diffusion process, perceived cultural and managerial differences between the two companies, technology diffusion and learning opportunities available to the parent and subsidiary companies. Interviews from multiple functions were drawn for a representative account of the ways in which knowledge-driven work systems were

sustained in the firms. The aim of the inquiry was to reveal the different truths and realities held by different individuals across sections within a firm as well as groups across nations (Stringer, 1996). Participant observation in these two companies was limited to a week, given the change in employees' work schedule⁴⁷. Hence, interviews with factory personnel and managers were necessary to attain a complete picture of the social patterns in the factory. Interviews were also necessary for background information on the factory structure and work relations at the time of the company's foundation, for these patterns, given their occurrence in the past, could not be experienced in person.

In the case of the technical collaboration, the perceptions of research participants on the past collaborative project were gathered through interviews and document analysis. Interviews at Rover were conducted between January 1999 and September 1999 with 23 employees, including senior managers across design, purchasing, and manufacturing. Discussions focused on how the R8/YY (Rover 200/Honda Concerto) project that commenced in 1985 (with a model launch in 1989), was carried out by the electrical engineers in a framework of diffused Japanese quality improvement philosophies and techniques. There was a focus on electrical engineers, as their working relations with Honda members were seen as better than those in other departments at Rover, hence favourable characteristics that were likely to influence the internalisation of Japanese work systems could be more easily identified. Interviews focused on the views of 18 engineers based at Rover since the time of the collaboration, who were involved at some stage in the R8/YY project. Nine of the engineers constituted the core team of the 30

⁴⁷ The number of working days was reduced from five to four days due to a drop in the sales volumes of major customers. This was a measure taken to avoid lay-offs.

electrical engineers who visited Japan and served liaison roles for a period of six to 12 months. The nature of the research questions addressed to the subsidiary firms applied to the Rover-Honda collaboration as well. In addition, specific Honda practices that were diffused to Rover and implemented at the time of the R8/YY project were explored, as well as mechanisms for sharing ideas and the role of technology on the effectiveness of the collaboration. In brief, the questions focused on the knowledge-sharing dimension within the engineering project and diffusion across the two companies. The same questions were also directed to 10 Honda members. Four of these were principal engineers on the R8/YY project based in Japan. One of the Honda members was the project manager on the R8/YY and another occupied a managerial position on the XX project. The remaining four were senior managers. One of the senior managers was based at Honda R&D UK, the second at Honda of the UK Manufacturing Ltd., and the remaining two at the Rover Liaison Office of Honda Motor Europe Ltd. (see Appendix II for a list of interviewees at Rover and Honda). Some of the engineers on the team (four at Rover and five at Honda) could not be interviewed, as they were no longer affiliated with the company (mainly in the case of Rover) and the electrical engineering department (in the case of Honda). In addition, there were resource constraints with regard to the three-week visit to Japan. Rover members were approached via snowball sampling involving direct letters and fax messages. A similar approach to Honda—that is sending letters that expressed the purpose of the research and requests for meetings—proved futile as there was no familiarity on the part of the Honda members with the researcher.⁴⁸ Rather, contacts at Rover were resorted to in approaching specific names in senior managerial

⁴⁸ The researcher had to be 'recommended' to a Honda member by a trustworthy British counterpart at Rover.

positions at Honda. Honda R&D in Utsunomiya and Honda Headquarters in Aoyama, Japan, were visited for interviews during March and April 2000. The engineers provided specific information relating to the concerned project, whilst senior managers provided the history of the collaboration, including its industrial and economic background. In addition to formal interviews, there were informal conversations with Rover engineers that allowed interpretations following interviews to be clarified and confirmed.

In sum, Rover and Honda employees seemed to be co-operative and relatively open about their experiences during the R8/YY joint work. It was a project carried out in the past and the commercial sensitivity of the information provided was no longer an issue. As the research was a retrospective study of the diffusion of Honda practices to the UK partner, Rover members could more rationally reflect upon their joint work by presenting both their negative and positive experiences. During discussions, participants were engaged in the process of reflecting on their experiences, rather than living them. This enabled them to better articulate their experiences and perceptions. A retrospective study could reduce the likely occurrence of an attribution bias, where a negative occurrence is attributed to an external cause, rather than an internal interpretation (that is something within the personal control of the respondent) (McKenna, 1994). Respondents at Rover could hold their group members or company responsible for mistakes or managerial deficiencies over the course of their collaboration with Honda.⁴⁹ The researcher was sensitive to the possibility that members could over-rationalise their experiences. Effort was made to

⁴⁹ The same did not necessarily apply to Honda members. This might have been due to the strong implications that the norm of losing face has in the Japanese culture. At the same time, interviews with Honda engineers were held in the presence of two senior Honda members, one of whom had recently retired. The retired member acted as a translator, at times, during the interviews.

minimise such drawbacks through methods of validation (see Section 4.4.2).

Interviews in the sampled firms were open-ended and semi-structured, and addressed the incorporation of Japanese production and managerial philosophies and techniques into two subsidiaries and a collaborating firm in the UK. Multiple modes of evidence were built into ongoing data collection for testing or confirming conclusions (Miles and Huberman, 1994). A combination of multiple methods allowed rigour, breadth and depth to be added to the investigation (Flick, 1992). Interview questions pertained to “meaning and general knowledge information”, rather than information used to count phenomena through surveys and compilations of official data (Besser, 1996:30). The type of information sought was concerned with the meaning for individuals of events, relationships, social structures, roles and norms (Kamata, 1982; Hamper, 1991).

The list of interview questions for the three companies (see Appendix III) were complemented with preliminary data on the firms. Protocols (Yin, 1994) incorporating schedules of company visits and members to be interviewed were developed. The majority of the interviews were taped and transcribed.⁵⁰ Wherever possible, confirmation of the contents of the transcriptions was sought. The resulting data were processed into

⁵⁰ Seven Rover, one Nissera UK and four Teniki UK interviews with British respondents were not taped, as the conditions under which the interviews were conducted were not suitable for recording. There were very few instances where the researcher felt that the tape recorder led to withholding of data by the participants. The train journey rides provided an excellent opportunity for turning rough notes into readable reports as soon as the data were collected. As Delbridge (1998:21) contends “despite the difficulties, it is important to try and record the events of the day as soon as possible since there is a greater likelihood of ethnocentric bias creeping into the data the longer the records are left”. Notes were taken in the case of interviews with Japanese participants. Given the language difficulty and the specific trust-building mechanism in the Japanese society (where heavy emphasis is placed on goodwill trust that forms over time), note-taking rather than tape-recording was necessary. Moreover, note-taking allowed Japanese respondents to demonstrate the issue at hand by sketching it on paper.

reports and sent to gatekeepers in each company for feedback.

The data collection at Teniki UK, Nissera UK and the Rover-Honda Collaboration is summarised in Table 4.3.

Table 4.3 Data Collection at Teniki UK, Nissera UK and the Rover-Honda Collaboration

	Teniki (UK)	Nissera (UK)	Rover-Honda
Document analysis	Company reports, local development agency reports	Company reports, local development agency reports	DTI reports, journal and newspaper articles, books, internal reports
Interviews in the UK	18 (August 1998-January 2000)	14 (April - September 1999)	25 (January - September 1999)
Interviews in Japan	2 (April 2000)	6 (April 2000)	8 (March - April 2000)
Total number of interviews	20	20	33
Participant observation (in the UK)	1 week's work experience as an operator in air element, air cleaner and carbon canister assembly (July 1999)	1 week's work experience as an operator in cluster assembly and PCB manufacture (June 1999)	Not applicable (given that the project was developed between 1985 and 1989)
Factory tours in Japan	Saitama plant; air cleaner assembly, injection and blow moulding and press shops (April 2000)	Liquid Crystal Display production, case assembly, Research & Development Centre (April 2000)	[Tour of Rover's Longbridge plant (June 1999)]

Source: Data collected between 1998 and 2000

The questions were translated into Japanese and presented to each participant interviewed in Japan together with the English version for a clearer understanding of the concepts presented to the participants. The Japanese version of the questions was sent to the

participants based in Japan in advance of the researcher's visit to the Japanese parent and partner firms. Both the English and the Japanese versions of the interview questions were developed on the basis of the levels and concepts presented in the analytic framework (see Chapter 2), and deduced from the research questions (see Chapter 1). The list of interview questions was divided into three sections. The first section aimed to capture the institutional elements that could have an impact on the implementation and internalisation of work systems at the adopter firms.⁵¹ In Section II, there was a focus on organisational characteristics, such as structural and cultural elements, that could influence the diffusion process. The questions in this section were preceded by a historical discussion of the establishment of the organisation (when and by whom, that is, which key actors were involved in the process of establishment). The range of products manufactured, customers served and the size (in terms of the number of employees) of the company, provided by the gatekeepers in each firm, were also considered. In Section III, questions were asked about group characteristics that could influence the internalisation of alternative work systems at the factory and the engineering project level. Participants were asked for their perceptions on the method of diffusion, the performance implications of, and the worker response to the alternative systems.

4.3 Data Analysis

The analysis of empirical data (see Chapter 6 for the results) reflects Djelic's (1998) two-

⁵¹ Platt (1988) notes that one would use case studies when one deliberately wants to cover contextual conditions. Why and how questions are asked about a contemporary set of events over which the researcher has little or no control (Yin, 1994). This allows for socially acquired and shared knowledge to become available to the researcher.

step comparative historical analysis. It combines detailed case studies with systematic comparison. This is similar to Westbrook's (1995) specifications in action research for initially achieving contextual understanding, then carrying out a comparison for generalisation. In Djelic's (1998:14) words, detailed case studies ensure that "historical and contextual singularities are not being disregarded", and systematic comparison "allows for a significant theoretical leverage and represents a powerful tool, thus making generalisation possible". As a first step, in-depth case studies were conducted to gain insights into the historical context of the selected cases. This provided the main conditions for a given outcome, that is the degree of internalisation of Japanese work systems within each of the cases. Interview transcriptions and observation notes were scanned to identify all the relevant data about the attributes of work systems diffusion. This generated a list of tentative sub-themes under the main themes identified in the literature review (see Section 2.2.1, Chapter 2). Iterative loops of adding and amending sub-themes led to those that were identified as the most important in explaining the diffusion process. The internalisation or the acceptance of work systems was seen as influenced by, for example, participation through teams, emphasis on training, approach to discipline and the level of trust and communication. (Chapter 5 will explore these issues in detail). Sub-themes that were not comparable across the three companies or were only mentioned by a single respondent were not included in the analysis. For example, the production manager at Nissera UK (30 July 1999) indicated a lack of interest in suggestion schemes on the part of the workers: "we have launched it [the suggestion scheme twice]. People are just not motivated". This particular component of continuous improvement scheme was not diffused to Teniki UK, hence was excluded

from the findings reported in Chapter 6 on the basis of its lack of comparability. The same applies to the sick pay scheme that was detailed as “we have a sick pay scheme where if you have a good year and have seven out of 240 days absenteeism, you will be granted for next year a 100 per cent pay for sickness” by the production manager at Nissera UK (30 July 1999). No information on the sick pay scheme was reported by Teniki UK and Rover respondents. Furthermore, data that were not relevant to the levels of analysis and research aims addressed here were excluded. For instance, worker “complaints” were perceived by two of the administrative staff at Nissera UK as follows: “you will always hear complaints. Perhaps they have not got much work to do. We changed the bins in the ladies’ room and got complaints that they were not hygienic enough”. Similarly, the lack of trust between some of the operators at Teniki UK was not included in the discussions in Chapter 6, for this constituted an individual level of analysis that differed from what the study aimed to analyse: “you cannot trust all. They may look pleasant but will tell the supervisor behind your back. They may try to get you into trouble. They will not tell you things you should not do” (assembler at Teniki UK).

The answers provided to more pertinent questions, such as barriers to diffusion of work systems, focused on a communication barrier between the Japanese and the British. For example, British (Indian by origin) Electrical Engineer E at Rover (7 May 1999) argued:

It may be because I have myself been living in a different culture so personally maybe when I bumped into them I saw myself in them, where I was when I first came to this country [the UK]. I sort of knew what problems they might come across. I guess I was more open to that type of issue. But with other people, they had not experienced those issues themselves so they thought no one else has those issues. I think maybe in

Britain the tendency is that everybody else can learn English. And I do not want to learn any other language. When you first come across people, when you have been in a similar situation yourself, you can relate to them. The more you relate to them, the less these barriers.

As other respondents acknowledged a communication barrier, theoretical saturation was reached on this issue and the 'level of communication' was included as one of the sub-themes in the analysis. There was also theoretical saturation on the differences in company philosophies between Rover and Honda that were seen as a barrier to diffusion.

The biggest learning curve was that they [the Japanese] stick to their processes. Culturally or the way they are brought up, they follow the steps. Whereas in the way Europeans think, it is 'we got to get from there to there. Oh we can take a shortcut', which brings you to the earlier point, because psychologically we do not follow the steps, that is if the process is right or wrong. If you always take shortcuts, you never know if the process is right. Even if you think the process is wrong, you should follow the process and then take out what is wrong or modify the bits that are wrong.

(British Electrical Engineer F at Rover, 21 June 1999)

Perceived differences in company philosophies were included in the discussion on the degree to which workers understood and accepted the philosophies or the underlying tacit principles of continuous improvement under 'organisational culture'.

The second step in data analysis consisted of a systematic comparison, which was carried out to determine not only necessary conditions, but also a possible multiplicity of paths towards the same outcome. A 'method of difference' (Djelic, 1998:15) was adopted in

making comparisons of cases with different degrees of internalisation of alternative work systems. In this way, conditions that might be responsible for the variation in outcomes could be identified. (These comparisons will be discussed in Chapter 6).

4.4 Reliability and Validity Concerns

Qualitative case studies, including participant observation that involves the immersion of the researcher into the social setting under study, can be regarded by those with a positivist approach to methodology as highly subjective (e.g. Schatzman and Strauss, 1973). For example, the researcher may be seen as impacting on the social setting, or forced to rely on his/her own perceptions. Under the circumstance, representations need to be given credence or legitimated through cross-checking. This research employs multiple data collection as a means of minimising inaccurate interpretations. Multiple cases, multiple informants within each case and across nations (i.e. interviews with both British and Japanese members), and more than one data gathering method are used to strengthen the study's usefulness for other settings (Marshall and Rossman, 1995).

This study counter-challenges what the traditional canons perceive as a weakness—low external validity—in qualitative research by explicating the theoretical parameters of the study. It presents how data collection and analysis were guided by concepts (see Chapter 2). Effort was taken to participate in the factory activities of workers, taking into account the opinions and actions of the people with whom the researcher interacted. Nonetheless, as the researcher was part of the social world that was being studied and had intrinsic values and beliefs from which she could not wholly detach herself, absolute neutrality or

true objectivity was impossible to achieve. As Delbridge (1998:18) contends, “from conception through implementation to analysis and final interpretation, an individual’s personal values and experiences will affect the research process”. Under the circumstance, the challenge for the researcher was to be conscious of any factors that could render the study “unintelligible, unrepresentative, or irrelevant” (ibid.). In the given study, the impact of the researcher’s presence on the findings was minimised by forming relationships with the members in social settings.

The qualitative case studies conducted in the three firms were subject to adequacy or validity, and reliability problems, as would be a quantitative study.⁵² There was still a need to organise and interpret observations in qualitative research in a systematic way. Measures were taken to ensure that quality aspects, including reliability, construct validity, internal validity and external validity were incorporated into the study.

4.4.1 Reliability

The reliability of the research results was enhanced by making explicit the procedures that had been followed for data collection. These procedures included matters of interview protocol, tape-recordings of interviews and the feedback on transcriptions from the participants, as well as building and sustaining relationships in the field.⁵³ Also of

⁵² Although the terms ‘validity’ and ‘reliability’ are borrowed from positivist natural sciences to test for the coherence of the study (especially given the fact that a systematic comparison is performed), they do not imply a simple causality between the phenomena under investigation. There is an attempt to capture the complexity of understanding, in addition to providing an explanation of why things are how they are. In other words, the research adopts ‘theoretical realism’ rather than a truly naturalistic perspective. Social action, in this context, is seen as “occurring within relatively enduring social-structural conditions which do not determine those actions but do constitute a form of ‘objective reality’ within which those actions take place” (Godard, 1993 in Delbridge, 1998:16).

⁵³ This helped in attaining considerable degree of internal coherence and plausibility (Atkinson, 1990).

importance was the collecting of secondary information,⁵⁴ such as journal and newspaper articles, Department of Trade and Industry publications, books devoted to the Rover-Honda collaboration and company reports.

4.4.2 *Construct Validity*

Due to the nature of the kind of information sought, concerned as it was with the meaning for individuals of events, relationships, social structures, roles and norms, there was no easy means of checking validity (Besser, 1996:29). If true meaning is what the credible members say it is, it is necessary to decide how many participants one should interview in order to have a clear picture of the social patterns in a given organisation. A valid picture of the researched phenomenon is attained here through theoretical saturation. This is defined by Glaser and Strauss (1967) as an instance when a researcher interviews members of a specific group about the meaning of some aspect of reality and the same responses, themes, concerns and feelings come up again and again. When “no additional data [can be] found whereby the sociologist can develop properties of the category”, theoretical saturation has been reached on this issue for this group (ibid., p. 61). In addition, this study adopts a multilevel approach. It investigates knowledge-driven work systems diffusion at the institutional, organisational and group levels, and this is useful in saturating categories of incidents. It is argued that a multilevel approach is necessary to provide a representative account of a complex organisational phenomenon as that of cross-national diffusion of work systems (Kostova, 1999).

⁵⁴ According to Eisenhardt (1989), prior research and literature about a subject can provide a valuable source for comparative analysis and validating theory.

Initial concepts and frameworks were tested through preliminary interviews, while research sites were being explored. This testing was carried out at an early stage in the research process. Questions were semi-structured, so as to provide for consistency across the cases in the message conveyed to the participants. The semi-structured questioning also provided the opportunity to probe issues deeper to obtain an in-depth understanding of the key characteristics that were likely to shape the process of internalising Japanese work systems. This questioning provided the researcher with the flexibility to track key issues as they emerged. In addition, participant observation made it possible to capture, understand and analyse social relations and processes. It allowed the researcher to examine the main activities of the working day and in particular how participants “[took] recourse to context-linked typifications in order to make sense of their activities” (Hassard, 1993:98). In the given case, it was necessary to learn the informal rules that were being followed and the way these were interpreted.

The research addressed the matter of respondent bias by triangulating data. Multiple sources of confirmation were necessary to clarify meaning and to verify the repeatability of an interpretation (Raymond, 1996). Data were drawn from interviews, participant observation and document analysis. Moreover, within the case companies, interview data with a particular work group were checked against responses from another group. For example, factory workers’ accounts in two of the cases were triangulated with the team leaders’ and the managers’ accounts. Similarly, British and Japanese participants’ accounts were cross-checked against each other. This helped minimise possible translation errors.

Individual case findings were presented in various conferences for cross-checking the use of research concepts. This was also a check for coherence of arguments. In other words, there was a check to ascertain whether the conclusions followed from the premises, and correspondence. Interpretations had to be written or staged as a presentation which required direct response from an audience (see Appendix IV for a list of papers presented at conferences).

Interview data were also cross-checked with research participants. Company reports circulated for feedback served to validate research results. There were several employees with whom the researcher interacted regularly and to whom she was able to go back to whenever there was a need for elaboration and clarification.

4.4.3 *Internal Validity*

To arrive at insights into the relationship between institutional variation and work systems diffusion, Yin's (1994) principle of pattern-matching was employed. The case studies revealed how and why a particular degree of internalisation of Japanese work systems had occurred. There was an intensive search for patterns in key characteristics that explained a given level of internalisation. After analysing the historical constituents of each case, events of each company were compared and contrasted to reveal similarities and differences. These results were then compared with the research questions about the influence of institutional, organisational and group elements on the internalisation of Japanese knowledge-driven work systems. The two-step comparative historical analysis (discussed in Section 4.3) promoted the internal validity of the research by minimising

the possibility of misinterpretations caused by the researcher's selective perception.

4.4.4 External Validity

The domain to which findings could be generalised was the historical neo-institutional framework in an analytic rather than statistical form (Yin, 1994). As the research aim was to explain the complexity of social exchange in a factory setting and on a collaborative project to highlight the key concepts constituting the diffusion process, the statistical generalisability of findings to other settings was not of concern in this study. However, it was possible to arrive at empirical pointers for the future. A future step would be to investigate conceptually similar but apparently contrasting situations (Bechhofer and Paterson, 2000).

This research focused on the cognitive systems and normative patterns that outlined the expected mode of social relationships in the factory and the joint project settings. Other research strategies, such as surveys and archival analysis, were considered as constrained in their potential to tap into the “mental models in which human beings create working models of the world by making and manipulating analogies in their minds” (Nonaka and Takeuchi, 1995:60). In this context, it becomes more meaningful to rephrase the question of whether case studies are generalisable to a form that reads as follows: ‘in what sense is a case study representative?’. Reflecting upon the matter, one could draw patterns of behaviour in a particular group of organisations. For example, firms located on greenfield sites may reflect levels of internalisation that are different from those located on brownfield sites. The case companies illuminated and developed the analytic framework

presented in Chapter 2 and, hence, were treated in some sense as representative.

4.5 Summary

The research design of this study is based on a comparative analysis of firms operating in similar industries with similar diffused work systems, but on different sites and under different forms of ownership. The focus of the research is more on the processural aspects of the diffusion process than on the structural aspects. In this way, limits to comparing firms of different structural parameters are reduced.

The aim of the comparison is to investigate the impact of national and local institutional variation on the internalisation of knowledge-driven work systems. The research process is composed of 16 major stages that reflects a constant shift between theory and practice. The stages include (1), (8) exploration of arguments in the innovation processes, Japanisation and neo-institutional literatures, (2) construction of an initial conceptual framework, (3) exploration of research sites/ negotiation of access, (4) development of an interview protocol, (5), (7), (9) (11) data collection at the UK affiliate firms, (6) revision of the conceptual framework, (10) case write-up, (12) revised case descriptions and further readings on neo-institutionalism, (13) further data collection via a visit to Japan, (14) data processing/comparative analysis of the cases, (15) feedback from respondents on the analysis, and (16) final revision.

The exploration of research sites began in mid-1997 and lasted eight months till 1998. This included interviews at five joint ventures and two subsidiary firms. The major data

collection started in 1998 and lasted until April 2000. Data were collected at two UK subsidiary firms, complemented with interviews at the Japanese parent companies, and an Anglo-Japanese technical collaboration, with interviews conducted at both partner firms. The selection of firms included brownfield and greenfield subsidiary firms and a technical collaboration 'committed' to continuous improvement activities in the automotive manufacture sector. Criteria considered in the selection of firms included site, sector, form of ownership, and the nature of diffused work systems, that is efforts to achieve continuous improvement in quality and reliability.

Data relating to employee and managerial perceptions of the way in which Japanese knowledge-driven work systems were diffused to adopter firms and the characteristics that had an impact on their implementation and internalisation were gathered via semi-structured interviews with the following groups of people: Japanese advisors, British and Japanese directors, senior managers, and British team leaders and operators. Participant observation in factory settings was also of importance in securing such data. Additional data were collected from secondary sources including company reports, DTI reports, journal and newspaper articles, books and local council reports. Interviews were based on a pre-defined schedule and a list of questions (that is an interview protocol) aimed at capturing institutional, organisational and group influences. All interviews, with the exception of the 12 with British employees and those with Japanese members, were recorded, transcribed and fed back to gatekeepers.

The data analysis took the form of a two-step comparative historical analysis. Interview

transcriptions and observation notes were scanned for tentative sub-themes, and key sub-themes were selected upon iterative loops of adding and amending. Systematic comparison of data determined necessary conditions in explaining the outcome.

A range of methods and techniques for qualitative research was used to enhance the reliability and validity of the results. Reliability was enhanced through explicating methods used in data collection, such as tape-recordings of interviews and feedback from participants. Construct validity was promoted through preliminary interviews, triangulation of data and feedback from academics at conferences. Internal validity was enhanced through pattern-matching of key explanatory characteristics across the three cases. External validity was promoted through analytic generalisation, where research findings were fed back to the earlier-adopted analytic framework.

CHAPTER 5

WORK SYSTEMS DIFFUSION IN THE AUTOMOTIVE INDUSTRY

This chapter presents the results of the field study conducted over the period 1998-2000 in a brownfield subsidiary (Teniki UK), a greenfield subsidiary (Nissera UK) and a technical collaboration site (Rover-Honda) within the UK automotive industry. It provides an overview of the institutional legacies that are generally defined at the national level but have a clear impact on practices at the local level. The detailed and systematic descriptions of the three cases refer to key characteristics that have an impact on the diffusibility of work systems from Japan to the UK. These are (i) the local institutional characteristics of location site and area, skills base, government initiative for or inward investment and the level of industrial dispute, (ii) company characteristics of age, size and terms of financing, (iii) organisational characteristic of the nature of diffused work systems, and (iv) group characteristic of team attitudes towards alternative work systems. Contextual information relating to the local conditions surrounding the three companies is introduced first. This is followed by an analytical overview of the characteristics that had an impact on the implementation and internalisation of multinationals' work systems by affiliate firms at the organisational and group levels. Sensitivity to contextual influences at each site was crucial, as they helped shape the way in which employees responded to the demands of 'new' work methods. For instance, Storey and Harrison's (1999:661-662) case study of a specialist engineering products manufacturer, owned by an American firm and managed by the British, shows that it may

be possible to “install new manufacturing methods within a brownfield site and to win a sufficient degree of co-operation from the workforce”, if there are sufficient levels of technological investment “in conjunction with due attention to an appropriate employment relations strategy, which is adapted to the needs of different cells”. However, the authors do not consider the role of the control mechanism, organisational structure and local institutional characteristics on the diffusion process in their study. They thus fail to provide a thorough analysis of workers’ response to alternative work systems. In contrast, this study addresses the diffusion of structural, cultural, control-related and technological practices. It also shows sensitivity to local institutional characteristics. The analysis of the characteristics, on the basis of which the three cases are compared, can be found in Chapter 6.

5.1 Teniki UK, Nissera UK and the Rover-Honda Collaboration Sites

Teniki UK, Nissera UK and the Rover-Honda collaboration sites are all located in the automotive manufacture industry. They involve similar types of production systems such as lean manufacturing techniques and philosophies, and are said to be more committed to continuous improvement than firms operating in chemical, plastics, pharmaceutical and health care, textiles and apparel, as well as food and drinks industries. Their strategic decisions may have a major impact on the sectoral patterns of technological activities and competitive performance. Other similarities concern structural developments such as a shift towards a team structure. However, there are also significant structural differences and variations in industrial relations among the case firms that can be linked to past institutional developments. These influence the degree of internalisation of Japanese

knowledge-driven work systems in the firms. Similarities and differences among the firms are outlined in the sections below.

5.1.1 The Automotive Manufacture Industry

The three adopter firms investigated, Teniki UK, Nissera UK and Rover, face similar environmental challenges, stressing their need to be innovative and competitive. They aim to enhance manufacturing skills, and quality and productivity of their output by adopting the latest working practices, that is, in Invest in Britain in Bureau's (1999) terms, lean manufacturing systems and commitment to continuous improvement. The philosophy of the companies is based on exploring new technology and constant innovation, and enhancing the well-being of their staff, actively encouraging their personal development as well as supporting the communities in which they live. They claim to take pride in being committed to continuous improvement in quality, reliability and service to all their customers through a programme of total quality improvement.

Japanese manufacturing investment in the 1980s was primarily attracted to two geographical concentrations: "new towns such as Milton Keynes, Telford or Livingstone; and old, industrial districts, such as South Wales, the West of Scotland and the North East of England" (Smith and Elger, 1998:271). This investment was of a Foreign Direct Investment (FDI) nature, and focused on greenfield rather than brownfield sites. It is argued that in new towns (such as Redditch in which Nissera UK is located), large firms have enhanced their power over relatively underdeveloped local labour customs, practices and conditions, and are, thereby, in a better position to take advantage of the

conditions for new types of employment relations that are distinct from the British norm. For older industrial districts, such as Longbridge where the Rover plant is located, characterised by declining heavy or primary industries, the bargaining position of companies is claimed to be strong because of the high levels of unemployment in the area (ibid.). For example, unemployment in the West Midlands and Great Britain as a whole (9 per cent) has been consistently higher than that of the Telford work area (7.8 per cent) (Wrekin Council, 1994 in Sharpe, 1998a:91). In other words, workers would be expected to be more willing to accommodate to a new workplace regime out of economic necessity. However, some of the challenges they face vary, due to the nature of their site locations. Although, as discussed in Chapter 2, the major practices—structural (participation through teams), cultural (commitment to quality improvement schemes), control mechanism (the degree of Japanese involvement in strategic decisions and operations) and technological (the diffusion of advanced technology)—that are diffused to all three case companies are similar⁵⁵, the degree to which they are infused with value and accepted in each research site differs. Remnants of an earlier culture in the brownfield site inhibit the degree to which alternative work systems are accepted. An organisational culture embedded in fire-fighting discourages the adoption of alternative work systems. The differences between the requirements of the previous and ‘new’ work systems produce divergent interpretations of continuous improvement schemes. By contrast, the greenfield site is more conducive to the internalisation of Japanese knowledge-driven work systems, for ‘new’ work systems are introduced from scratch and

⁵⁵ However, it should be noted that the nature of the value-added processes engaged in at Rover compared with the other two cases is not the same. The diffusion of continuous improvement schemes to Teniki UK and Nissera UK relate to a learning activity in a manufacturing facility. Whereas the shift to a project-based structure and team culture at Rover relate to a learning activity in an engineering department within the

a set of common norms are complied to. As regards the technical collaboration, heavy and direct involvement of boundary-spanning individuals, company visits and personal relations facilitate both the implementation by management and the internalisation by engineers of alternative work systems. The following sections provide detailed descriptions of the degree of implementation and internalisation of Japanese work systems in each site, with reference to local institutional, organisational (including company) and group characteristics.

5.2 The Local Institutional Context of Teniki UK

Teniki UK theoretically serves as a brownfield site.⁵⁶ It was owned by a British firm before being acquired by a Japanese car component manufacturer, Teniki, in 1996. The British firm had initially formed a joint venture with Teniki to manufacture carbon canisters, with the aim of gaining capacity to supply the European market. This prompted the development of a technical centre to develop air induction systems capable of meeting relatively tight European standards on vehicle noise emissions. Teniki UK's main product is the technologically advanced carbon canister (37 per cent). Air Intake Systems are the second major product (35 per cent).

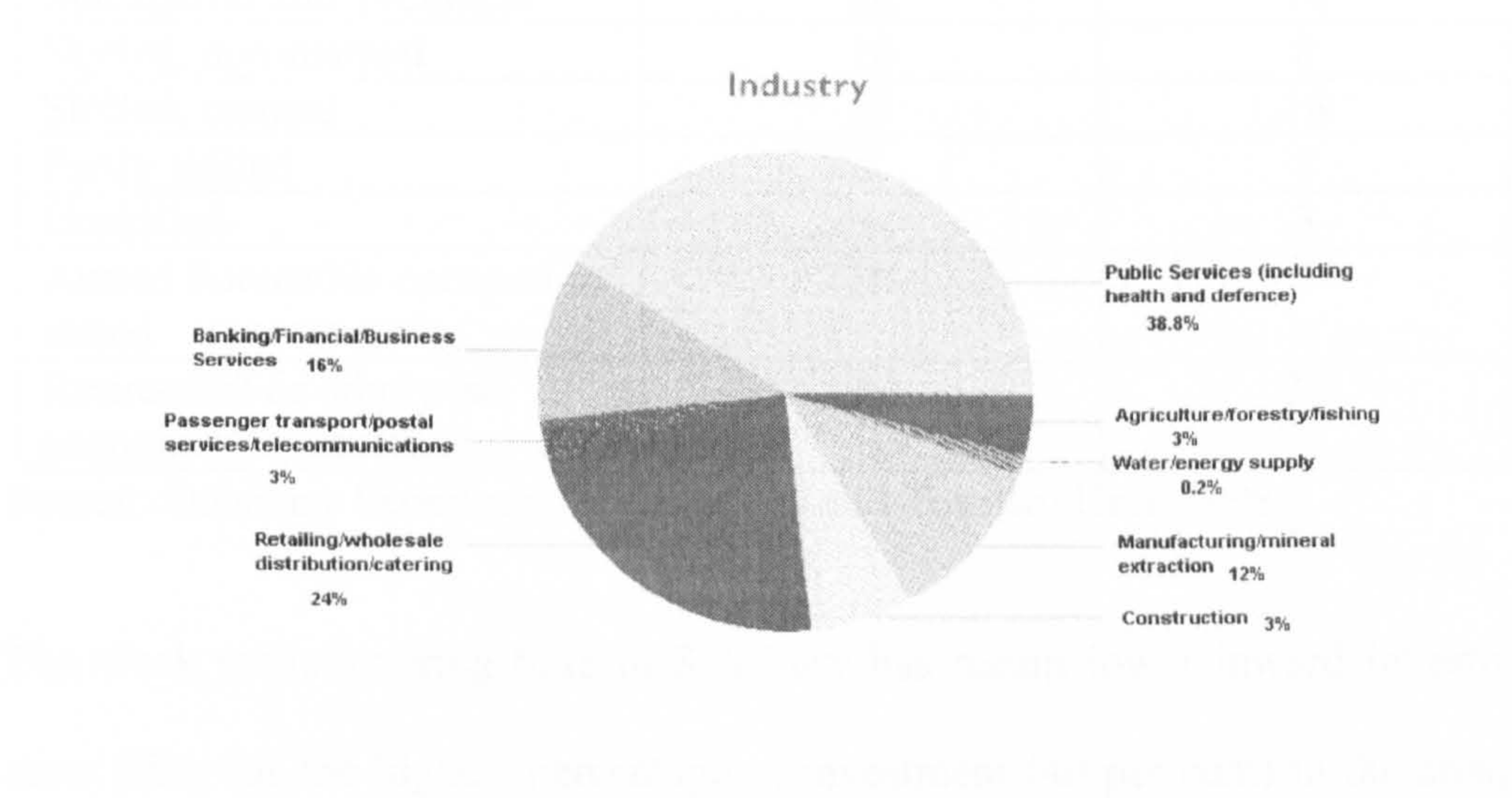
The parent company, Teniki, operates eleven manufacturing sites in Europe, Asia and Americas. Its biggest customer is a Japanese car manufacturer that holds 57 per cent of its

context of a technical collaboration.

⁵⁶ Teniki UK is located in Salisbury, South Wiltshire, on a greenfield site and has recruited new members since its acquisition by the Japanese MNC. Nevertheless, it confronts challenges posed by the previous organisational culture. Hence, it can be argued that the company lies in between a greenfield and a brownfield site. "With the people in here, the 100 odd people that are still the old school, it is the brownfield, you have to change them and lead them by the nose a bit, then you get the resistance. With the people you bring in, you say this is how it will be done. I think it is half-and-half. I think the gurus would say it is a brownfield, because we are changing and developing" (British Operations Manager, 18 January

shares. Teniki’s subsidiary in the UK is located in a centre for tourism where a large fraction of the labour force (38.8 per cent, Salisbury Economic Development and Tourism, 1998) is employed in the public sector (see Figure 5.1).

Figure 5.1 Salisbury Employment by Sector



Source: Salisbury Economic Development and Tourism Unit, 1998

The region has low dependence on the manufacturing sector. Employment trends in 1997 for Salisbury show that 12.3 per cent of the working population was employed in manufacturing. This figure has remained stable at 12 per cent over a six-year period, since 1991.

Although statistics relating to social class by occupation in 1991 (see Table 5.1) indicate that the highest percentage (18 per cent) of the population is economically active in the

2000).

managerial and technical group, this skills base is concentrated in the financial services sector. A good skills base is not visible in the manufacturing sector.

Table 5.1 Socio-economic Groupings of Households (1991 Census)

Occupational Division	Salisbury (%)	UK (%)
Professional	4	4
Managerial and Technical	18	19
Skilled, non-manual	10	8
Skilled, manual	15	16
Partly skilled	7	8
Unskilled	4	3
Armed Forces/No occupation stated	4	3
Retirement or otherwise economically inactive	39	38

Source: Salisbury Economic Development and Tourism Unit, 1998

The weak manufacturing base in Salisbury has meant lower inward investment in the area. USA has the highest percentage of investment (40 per cent) in the area, mainly in the electronics sector. Japan, Germany and France rank second (8 per cent) in their selection of Wiltshire as an area for investment.

Among the reasons for locating in Salisbury, grant regimes and the skills levels of the workforce are of low importance. In the case of Teniki UK, the main reason for locating in the Wiltshire region has been the geographical proximity to the company's major customer.

As regards the level of industrial dispute in Salisbury, it is much lower than the industrial average in the UK over a period of 1991 to 1998, with working days lost per 1,000 employees ranging from 0 to 54 (54 being an outlier).

Having discussed the key characteristics of the local institutional context, the section below details the organisational and group characteristics that have an impact on the diffusion process. The discussion is structured along the lines of the analytic framework outlined in Chapter 2.

5.2.1 Background to Teniki UK

The nature of the relationship of Teniki UK's previous owner (ABC Ltd.) under a joint venture agreement with Teniki was such that ABC Ltd. provided the production facility and the local management team, and Teniki provided the technical expertise. "It [the joint venture] was run by a group of directors with limited sales. They ran the operation in terms of production lines, very limited product types going through" (British Operations Manager, 18 January 2000). The joint venture performed poorly with low quality standards and efficiency levels. It became a wholly owned subsidiary company of the Japanese partner in 1996.

Before the acquisition of Teniki UK, the organisational culture was claimed to be ingrained in fire-fighting and poor management-worker relations. Older operators worked in a non-informative environment characterised by poor communication and weak control. "ABC Ltd. did not have anything in terms of Statistical Process Controls (SPCs) etcetera. They had no set standards. Japanese brought them as they came" (British HR Officer, 29 July 1999). Promises of training were made, but rarely delivered. Training focused on teaching skills related to an operator's immediate task. Operators were not introduced to an integrated manufacturing process. There seemed to be no real change to

the business structure, strategy or improvements in business culture (British Operations Manager, 18 January 2000).

Following the acquisition of the joint venture in 1996, Teniki replaced senior management with a more market-oriented, quality-conscious team. Since the acquisition, there had been six Japanese advisors in technical and development operations, sales and marketing areas. Having no line responsibility, they were brought in from the parent company to act as technical experts, avoiding hierarchical position as a control and filter mechanism.⁵⁷ The people side of management was left to local managers.

In terms of company characteristics, Teniki UK is classified as a medium-sized company with an employee base of 170 people (in 1999). It has not yet achieved economies-of-scale and this puts financial pressure on local management in its efforts to impart continuous improvement philosophies to the operators. Furthermore, 57 per cent of its parent company's shares are held by a Japanese car manufacturer—the biggest customer of Teniki. This arrangement also constrains Teniki UK's financial flexibility. Given its recent acquisition, Teniki UK has not been under the full ownership of the Japanese long enough to be fully ingrained with a continuous improvement culture. The implementation of Teniki practices is low. (The impact of the key company characteristics on the implementation and internalisation of the source company's work systems will be discussed in comparison to that observed at Nissera UK and the Rover-Honda collaboration in Chapter 6).

⁵⁷ Nevertheless, Japanese advisors occupy powerful positions. For example, Teniki requirements conveyed by the advisors to local management cannot be rejected.

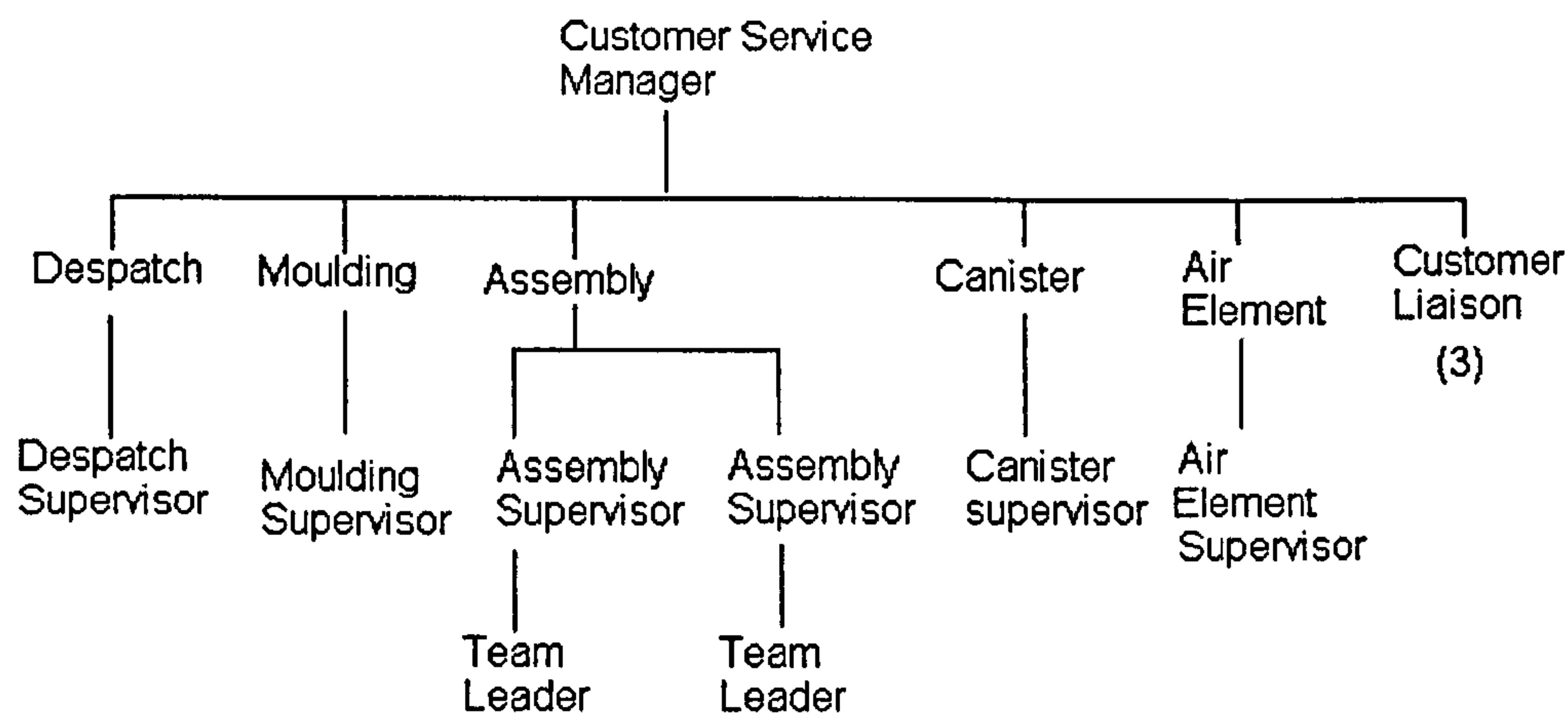
5.2.2 Organisational Characteristics

The key organisational characteristic that has an impact on the implementation and internalisation of Japanese work systems is the *nature of practices*, namely structural, cultural, control-related and technological, that are diffused. This key organisational characteristic also incorporates the influence of the degree of Japanese involvement on the internalisation of work systems. The selective discussion of particular issues under each type of work system is based on the iterative process of adding and amending sub-themes during data analysis to identify the key issues (see Section 4.3, Chapter 4).

5.2.2.1 Organisational Structure: The Shift to Team Structure

In the beginning of 1999, the organisational structure of Teniki UK shifted with the initiative of the local UK management from an hierarchical authority relations to a rather flat structure. Its structure under the previous ownership was set up along the line of superintendents, supervisors and hourly-paid workers (see Figure 5.2).

Figure 5.2 Production Structure of Teniki UK Prior to 1999



Source: Teniki UK Ltd., November 1998

Superintendents, who were responsible for all activities in the factory and had a wide span of control over hourly-paid workers, reported to the factory production manager. This structure saw a significant change in authority relations with the introduction of team leader positions. Team leaders played an important role in mediating relations between workers and management. The transition to a team structure, that is the implementation of structural practice, was based on the objectives of reducing costs and supervisor autonomy, and breaking ‘them’ and ‘us’ clusters in the company.

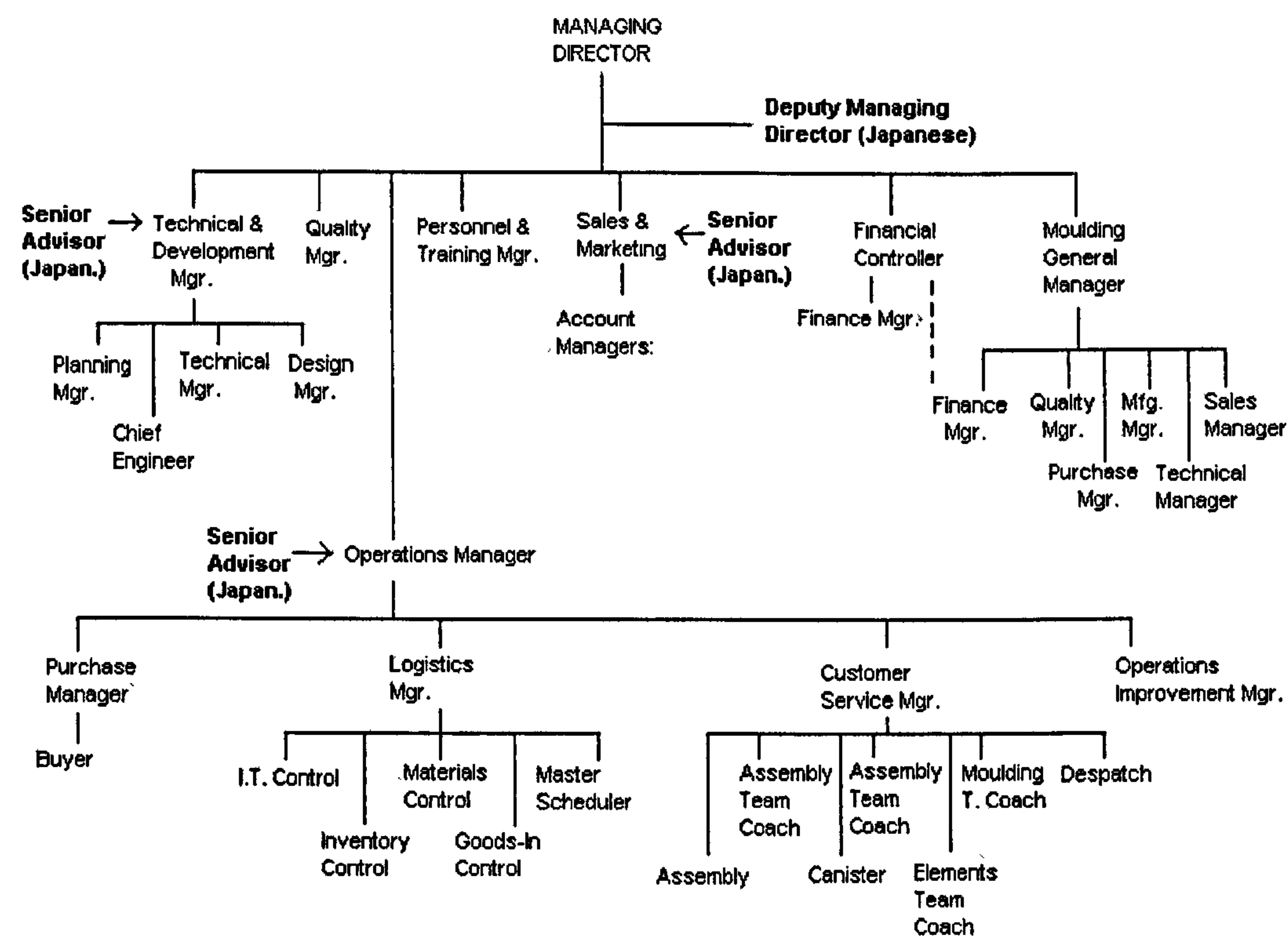
We had less number of supervisors, hence it was a cost-saving measure in that way. We had a lot who did not understand the difference between a team coach and a supervisor. With the new structure, there is a lot more concentration on the training side. Team coaches have more man-management and planning responsibilities. All team coaches are trained to train people. The benefits will take some time to reap.

(British Personnel and Training Assistant, 29 July 1999)

Although, currently, processes of selection and induction at Teniki UK emphasise ability to work in teams and to accept responsibility and flexible work roles, Teniki UK has difficulty in investing a high degree of ownership of continuous improvement processes in the hands of relatively self-contained teams. Operators do not see a major difference between the new and old organisational structure. To them, the shift suggests that team coaches have more administrative tasks to carry out at lower pay.⁵⁸ However, under the new structure, as can be seen in Figure 5.3, team coaches are responsible for maintaining daily records of performance within sections; controlling staff training records; monitoring absence, holidays, availability and hours worked; and developing, implementing and monitoring action plans to achieve a culture of continuous improvement.

⁵⁸ In reality, there is no pay difference between supervisors and team coaches.

Figure 5.3 Teniki UK Organisation Chart



Source: Teniki UK Ltd.

In brief, the role of a team coach differs from that of a supervisor, especially with regard to monitoring efficiency along statistical control methods.

In line with the ideas of continuous improvement, the factory is arranged in a cell layout with one to three people working in each cell on the assembly of carbon canisters and air intake systems.⁵⁹ This is seen as more efficient than having ten people on a production line. In addition, work processes are designed to eliminate many human errors. There are

⁵⁹ The factory also houses an air element production section.

mechanisms for monitoring causal factors, such as warnings close to exceeding tolerances.

The shift to a team structure had a positive impact on the line of demarcation between the technical and the sales department at Teniki UK. A technical centre was set up to improve communication with customers. This was seen as a means of combining the roles of the technical and sales departments to match the structure of the parent company. According to the Japanese Technical Advisor (17 December 1998) “a highly technical supplier can better support the customer. Prototype development is mainly a technical rather than a sales job, but it involves both tasks. It is not just idea development. At Teniki, it is the technical group which tries to attract new business”.

Teniki UK finds it difficult to replicate an ‘esprit de corps’ due to the length of time its structure has been in place, relatively low skilled workforce, short-term financing by the parent company and the indirect involvement of Japanese expatriates in shop-floor activities. These are explored in detail below, and will be analysed in comparison with Nissera UK and the Rover-Honda collaboration in Chapter 6.

5.2.2.2 Organisational Culture: Commitment to Quality Improvement Schemes

The transition to a team-based structure required high level of vigilance and care on the part of the operator. However, Teniki UK had difficulty imparting parent company’s continuous improvement activities, such as discipline in the workplace and ‘5C housekeeping’ principles, by securing everyone’s commitment to the process. Its

emphasis on training had a significant impact on the internalisation of work systems by the operators. Although there were remnants of the old ABC Ltd. culture in terms of fire-fighting at Teniki UK (British Design Manager, 16 March 1999), the company was perceived as performing better since its acquisition by the Japanese: “there is a communication problem at Teniki UK. Days of ABC Ltd. were worse. There was too much slack” (operator in Air Element).

Emphasis on Training

The acquisition of Teniki UK by the Teniki brought drastic change in training:

Training was ad hoc in the beginning [in 1998]. Even though it was Japanese-owned, we needed more training. Hence, I put up a strategy to emphasise training. We decided to try and understand the training needs, competence skills of people and the gap in their knowledge to achieve business aims.

(British Personnel and Training Manager, 15 February 1999)

The previous ownership focused on teaching skills that were related to an operator’s immediate task rather than the overall production process. “I was told that all I needed to know was air cleaners” (operator in Air Cleaner assembly). Although job training under current management is typically provided internally and includes consultation with staff and a personal development plan, the training and development plan has not instilled a continuous improvement culture at Teniki UK. Information on continuous improvement has not yet cascaded down to the operator level.

I believe, people [direct labour] understand that they need to cut costs in the business. However, the adoption of the approaches and the ownership of correcting the problems, they do not do. That again is partly through training and the pressure on the business, not being able to release them to train because the first thing we need to do to is keep our customer happy. We had a massive delivery problem when I joined. We are now sort of 99.9 per cent day in day out. Now that is stabilised, we can go back to people.

(British Operations Manager, 18 January 2000)

There is more emphasis on training the engineers and greater focus on developing National Vocational Qualification (NVQ) levels than QC philosophies at the operator level. As the skills level in the area is considered low, Teniki UK focuses on increasing operators' NVQ levels: "Teniki UK is located in an area popular for farming and armed forces. It is not an industrial location, so the education level is not that high. 60 per cent of the people have not more than 3 GCSEs" (British Personnel and Training Manager, 15 February 1999).

Japanese expatriates are not hands-on with the training of operators and team coaches. They feel that they are either not understood or listened to. For example, it is felt that "shop floor workers in the Thai plant think Japanese are better. They listen to the Japanese" (Japanese Technical Advisor, 17 December 1998). The Japanese perception of local management's emphasis on training is exemplified by the following quotes: "one's pay will remain the same even with slight increase in skill in Japan. However, at Teniki UK, a certificate can make a lot of difference in pay" (Japanese Senior Advisor in Engineering, 16 March 1999).

There is an emphasis on certificates in the UK. They initiate change from an analysis on paper. We analyse not on paper but in people's minds. It is based on experience, which includes lessons learnt from mistakes. You ask yourself the question of how you can improve. We have less documents, information on paper than the Europeans.

(Japanese Senior Advisor in Sales and Marketing, 17 December 1998)

Furthermore, financial and human resources available for training are limited. The four Japanese advisors who are in a position to train operators are occupied with start-up projects, hence they feel that they do not have the time to invest in training. The high labour turnover also discourages Japanese expatriates from investing their efforts in training. Low emphasis on training negatively influences the internalisation of continuous improvement principles. This is further exemplified in the following section.

5.2.2.3 Control Mechanism: Degree of Involvement by the Japanese

The level of involvement by local management at Teniki UK under the previous ownership was limited. "The company was started in 1991 by five guys. They sold their interest in 1993 to a holding company and milked the company dry over the next two years. They did not invest. In 1995, they put the company on sale" (British Account Manager, 15 February, 1999). ABC Ltd. was seen as providing "too much slack", and possessing poor organisation and a dirty, messy work environment (senior operator in Air Element). "ABC Ltd. did not have anything in place in terms of SPC etceteras. They had no set standards. Japanese brought them as they came" (British Personnel and Training Assistant, 29 July 1999). In other words, there were weak attempts to promote quality consciousness on the shop floor before the acquisition by the Japanese partner company.

This had repercussions on the shift to a new work style that met resistance at Teniki UK. With the acquisition of the company, the production facility received considerable investment from the Japanese.

What the Japanese shareholders are doing with us is that they invested a lot of money in this facility. They are growing in European market. We have introduced many new different product types and with that we have introduced many different processes to achieve those products. Therefore, the style of the business has changed very rapidly, as I understand, over the three years that the investment has taken place.

(British Operations Manager, 18 January 2000)

Japanese advisors at Teniki UK are not involved in day-to-day running of the business or manpower planning. Nevertheless, they exert considerable pressure on the technical and financial side of affairs, and have the upper hand in setting future trends and aims and in specifying counter measures for current problems.

Obviously they invest the money and provide the bank. They provide us with technology and new machines and new products. A new product which they have, which we do not have, we send our guys over there who learn the product, spend two to three months looking at the process. So, basically, they give us certain access to their processes and their products and we go pick up new ideas.

(British Managing Director, 21 August 1998)

The Japanese, in this context, are seen as passing information or explicit knowledge rather than know-how or tacit knowledge to Teniki UK, which is then interpreted and operationalised by local management.

They retain big influence on the design of our products. Therefore, they are imparting their know-how. In terms of running the operational side, I think they pass information on how best it should be done. 'This is what I believe you should be doing'. Therefore, you are passing information. You then have to translate that into knowledge, competence and skill yourself. We do that by analysing that information and imparting training.

(British Operations Manager, 18 January 2000)

The design responsibility for European customers remains with Teniki UK, whilst drawings for Japanese customers are produced in Japan as "it is easier to meet quality requirements and communicate with the customer" (Japanese Deputy General Manager in International Operations at Nissera, 7 April 2000). The majority of products are designed around Japanese processes.

They still require us to put in place best practice processes such as U-shaped cells, Single Minute Exchange of Dies (SMED), assembly cells, where minimum stock levels of product are within reach, ergonomically designed. So they expect best practice. However, achieving some of the best practices is problematic. (British Operations Manager at Teniki UK, 18 January 2000)

There is considerable financial pressure from the parent company on Teniki UK in terms of demands for rapid profitability, for the company has recently been acquired, and is provided short-term financing. Stringent parent company expectations constrain the budget allocated for training at the host company and inhibit the degree to which alternative work systems are implemented by Teniki UK management. Low degree of

implementation, in turn, discourages the acceptance of alternative work systems by workers at Teniki UK.

The way the company development has been financed has restricted that [the diffusion of Japanese practices]. The Japanese normally take a very long-term view in any investment. They are always for the future. For some reason, the way this business has been financed is through short-term loans instead of a large-share capital by the parent company. And the request has been that we make a very quick return on the investment whereas normally you would have maybe a few years' grace.

(Operations Manager at Teniki UK, 18 January 2000)

Stringent budgetary control is seen as having a negative impact on the fundamental training necessary for Kaizen activities. "I have had experience with Japanese advisors who were a lot more hands-on, get really involved in the business and they will muck in with everyone. However, because we are a new company, they need to evaluate what is going on. The main concern is cost at the moment" (ibid.). Teniki UK's financing is affected by the shareholding arrangement between Teniki and a Japanese car manufacturer.⁶⁰

Approach to Discipline

Teniki UK's approach to discipline in instilling a continuous improvement culture on the shop floor is found to be weak. The company had to abandon its '3S housekeeping'

⁶⁰ 57 per cent of Teniki shares are held by a Japanese car manufacturer. This has implications for Teniki's level of competitiveness. "The majority of the Japanese car manufacturer's work automatically goes to Teniki. There is no quotation, no competition. They are under no pressure to reduce cost and things like that. They, therefore, design something, send the drawings over to us and the immediate question our customers will ask is 'how can we reduce the cost?'. We would then need to go back to Teniki and say 'if you did this or this or this, then you could bring the overall cost down'. Long process. But then we need to revalidate all suggestions we come up with. And, more often than not, it is virtually impossible to do. Big problem" (British Design Manager at Teniki UK, 16 March 1999).

principles⁶¹ in 1997 due to a lack of commitment by its employees. The company has invested considerable resources in re-creating JIT/TQC system, for older workers tend to work according to their own rules and enjoy the freedom created by the weak control mechanism on the shop floor. They jig machines that do not work properly; eat and drink in production cells; fill in production time sheets at their own convenience (at the end of the working day rather than on an hourly basis) and manipulate scrap rate figures.

The biggest thing, which we have not been successful in, I suppose, is the Kaizen, small group activity work. We all know the benefits of doing that but again, the managers and engineers can actually carry on these activities, but unless the people on the shop floor buy into them and understand them and want to be part of them, it is not sustainable. You can create Kaizen activity, get result and potentially walk away. And if the people do not buy into it and understand why they are doing it, it is wasted. Because we have not cascaded the information down and have not got the skills bottom up to top, we cannot achieve this sustainable continuous improvement within the plant.

(British Operations Manager, 18 January 2000)

The QC initiative has not taken off at Teniki UK. Operators are not seen as having fully grasped continuous improvement principles.

Level of Trust and Communication between the Japanese and UK Staff

Japanese expatriates' role as 'boundary-spanning' individuals (Tushman and Scanlan, 1981) is significant in the dissemination of information obtained from the parent company to the local staff. Although Japanese expatriates are strongly linked to the

⁶¹ This is a modified version of the 5C principles consisting of sorting, straightening and standardising.

parent company for the diffusion of work systems, they are not necessarily linked to their more locally oriented colleagues (i.e. the UK staff). The stringent strategic and technical supervision and the communication barrier between Teniki UK and its parent company tend to contribute to perceived low trust between Japanese and UK employees. There is also weak communication that is due in part to the low British-perceived willingness on the part of the Japanese to learn from their subsidiary firm⁶² and cultural misunderstandings. According to the Japanese, the British cannot be trusted when they do not deliver what they promise. "It is common sense to do it, for Japanese have a guilt-conscious state of mind. Japanese will never say they will do it if they cannot keep their word. British believe 'do not be so negative. You can do it'" (Japanese Senior Advisor in Engineering, 16 March 1999). Both the communication barrier and perceived low trust between the British and Japanese negatively influence the degree to which work systems are accepted by workers at Teniki UK. One needs to invest in personal relations to be able to develop trust and have open communication with the Japanese. For instance, "emphasis on information sharing is there when you are in Japan, sitting face to face with them. When you are half a planet away they do not send you things out of courtesy" (British Product Engineer, 16 March 1999). The Japanese are seen as displaying a 'not invented here, hence no good' syndrome at Teniki UK. "Being British, we are not as good as them. They are good in manufacturing, but need us for marketing in Europe" (British Account Manager, 15 February 1999). There is also the feeling that the Japanese provide little feedback on the spot.

⁶² There is rather a 'discreet' form of high willingness to learn. In other words, the Japanese are not explicit in their efforts to diffuse knowledge from the UK subsidiary to Teniki.

When you pass requests up or present detail [such as yearly business plans], it is 'thank you very much, well done, ok, we will get back to you'...we tend to analyse something, want to go and change it very quickly whereas the Japanese want to analyse it, think about it, ponder it over, just checking their own mind whether it is correct, make some recommendations and then do it. That is different style of people than we are. (British Operations Manager, 18 January 2000)

There is a high willingness on the part of the Japanese to learn the European market developments. "In case of plastic product manufacture, Europe is more advanced. They produce module systems, which are easy to disassemble. Environmental regulation such as recycling in Europe, is stricter than that in Japan" (Japanese Deputy MD in International Operations at Nissera, 7 April 2000). However, the Japanese are not explicit in their efforts to transfer technical expertise in moulding and plastic product manufacture from Teniki UK to the parent company.

The low emphasis on control-related practices, encompassing a weak approach to discipline and a low level of trust between the Japanese and UK staff, is seen as hindering the degree of internalisation of alternative work systems at Teniki UK.

5.2.2.4 Technology Diffusion

Teniki UK is not a profound example of advanced technology in comparison to its parent company, which produces carbon canisters and high volume plastic products. It lacks design responsibility and serves more as a manufacturing facility, despite an investment

in 1999 in a Technical Centre and an extension to its factory⁶³. Neither its level of automation nor the reliability of machinery in assembly area is high. For example, the pleating line in the Air Element section had 100 per cent rework before part of the line was replaced by Japanese Teniki engineers in July 1998. The line previously had a manual knob with which one could adjust the distance between pleats. This was replaced with two rollers and three metal disks for automatic separation of pleats and the scrap rate was reduced to 20 per cent.

Information between Teniki and its UK division is exchanged at technical and business conferences.

We introduced our new technology in air induction systems at one of these conferences [the technical exchange conference]. We also have an overseas global conference. In the first Global Business Conference, we discussed technical matters. Key engineers gathered in Japan and discussed problems that occurred in each overseas plant. In the following Global Business Conference, we discussed quality matters—how to manage to keep the same quality standards across all plants.

(Japanese Deputy General Manager in International Operations at Nissera, 7 April 2000)

The nature of the information exchanged at these conferences is more explicit than tacit, and thus can be disseminated through a conference medium. In general, there is more emphasis on diffusing explicit than tacit elements of continuous improvement schemes to Teniki UK.

⁶³ “For example, European countries are more advanced in bi-metal moulding. Teniki UK has three of these moulding machines. Teniki does not have that machine yet” (Japanese Senior Advisor in Engineering, 18 January 2000).

5.2.3 *Group Characteristic: Attitude of Teams towards Continuous Improvement Schemes*

There is resistance to continuous improvement schemes, noticeably among older workers who have been with the company before its acquisition by Teniki. “You sometimes get the wrong kind of people, non-team players. They can argue and not fit in. They are mostly older ones with fixed ideas” (middle-aged operator in the Air Element section). The lack of commitment among some of the older operators on the shop floor is due in part to the preference for the old traditional British manufacturing system of union activity and craftsmanship. A senior carbon canister assembler perceives the problem in the effectiveness of the system as the outcome of different institutional processes in Japan and the UK: “it [housekeeping] is ingrained in Japan. It goes back a long way. The European continental approach is different. Production, sweeping and paperwork represent three separate jobs”. In other words, production is carried out by the operator, sweeping by the apprentice and paperwork by the supervisor. “We need the trade union down here to improve the work environment” (senior operator in Air Element). By the same token, the team coach of the carbon canister section argues that “they should take on apprentices. The company should also stress Health and Safety and accident logs. I have not seen it yet”.

The lack of conformity to continuous improvement philosophies is also influenced by a weak control mechanism. For example, the Air Element section shows that “people do not read the quality audits. They just put a check. Somebody at the end of the day should look at the sheets” (senior Operator in Air Element). The local managers seem not to be

too concerned with housekeeping as long as the targets are met.

The discretion used by different team coaches in managing their cells and the impact that this has on operators varies across cells. For example, the team coach of the Air Element section, unlike those in the Air Intake assembly section, is seen as being keen on bringing a fresh mind and eagerness to the workplace. His attitude is regarded as paternalistic towards his cell members. In line with the training system of the parent company, he attempts to instil a sense of self-belief and pride by constantly encouraging team involvement and new ideas through regular team meetings. He also provides immediate feedback—“at first these meetings will not be very interactive, the teams members preferring just to listen. But before long, a few ideas and moans will be forthcoming. These must be acted upon and reported back” (Team coach in Air Element)—, makes himself visible, and provides positive reinforcement—“tell them [the operators] they are the best but at the same time really believe in it yourself and thank them for their efforts” (ibid.). According to an operator “[the team coach in Air Element] gets the maintenance man when we need him. The rest act as typical British supervisors”.

In general, attempts to win worker commitment and loyalty by fostering high levels of job satisfaction at Teniki UK are inhibited by a shortage of human resources (due to the high labour turnover⁶⁴, see Appendix V for the change in employment between 1997 and 1999) and low skills level of the workforce. This, in turn, hinders the internalisation of Teniki work systems.

⁶⁴ The team coach in Air Element (28 July 1999) claims that “high turnover is crippling. You cannot establish stability”.

5.2.4 Overview

Table 5.2 provides an overview of the findings concerning the characteristics that have an impact on the diffusion of Japanese knowledge-driven work systems to Teniki UK. Initiatives taken by local and Japanese management to introduce alternative work systems at Teniki UK are not as strong as those at Nissera UK and Rover. This is presented as ‘low degree of implementation’ in Table 5.2. The degree to which alternative work systems are infused with value and accepted by workers at Teniki UK is also low. This is presented as ‘low degree of internalisation’ in Table 5.2. The local institutional context includes location on a brownfield site in a centre for tourism, low skills base in manufacturing, low government initiative for or inward investment and low level of industrial dispute. The medium-sized UK firm was acquired in 1996, and has a perceived medium level of financial dependence on the parent company. Teniki UK constitutes a subsidiary relationship, involved in assembly of car components. Its Japanese expatriate management base is small. The company experienced a shift to a team structure in 1999. However, this is not accompanied by a high commitment to continuous improvement schemes. There is a low emphasis on training. In addition, there is a high degree of involvement by Teniki in its UK division’s technical and strategic decisions. This takes the form of *indirect* involvement in shop-floor operations with a weak approach to discipline. Close control at the strategic level tends to have a negative impact on trust building between the Japanese and UK staff. The observed low level of trust is also associated with a high communication barrier. Moreover, Teniki UK is dominated by low technology diffusion in carbon canister and air element production and assembly.

Table 5.2 Key Characteristics that have an Impact on the Implementation and Internalisation of Japanese Work Systems at Teniki UK

	Key characteristics	Teniki UK
<i>Local Institutional Level</i>	Location: Site Area	Brownfield Centre for tourism
	Skills base	Low in manufacturing
	Inward investment	Low
	Level of industrial dispute	Low
<i>Company characteristics</i>	Size (in 1999)	170 employees
	Age (year of acquisition to data collection)	3 years (1996-1999)
	Nature of work	Assembly of carbon canister (37%), Air Intake Systems (35%)
	Form of ownership	Subsidiary relationship, 57% of Teniki shares held by Japanese car manufacturer
	Number of Japanese expatriates and their roles in the UK	4 (MD is British) Advisory role
	Skills level of the workforce/ Symmetry of expertise with that of the Japanese firm	Low
	Financial dependence on parent firm	Medium
<i>Organisational Level</i>	Nature of diffused practices - Organisational structure	Shift to team structure in 1999
	- Organisational culture: Commitment to continuous improvement schemes * Emphasis on training	Low
	- Control-related: Degree of involvement by the Japanese * Approach to discipline	High, Indirect Weak
	* Trust between the Japanese and UK staff	Low
	* Communication barrier	High
	- Technological: Technology diffusion	Low

<i>Group Level</i>	Attitude of teams towards the work systems of the source firm: level of commitment	Low
<i>Outcome</i>	Degree of - implementation - internalisation of Japanese work systems at the UK adopter firm	Low Low

Source: See text

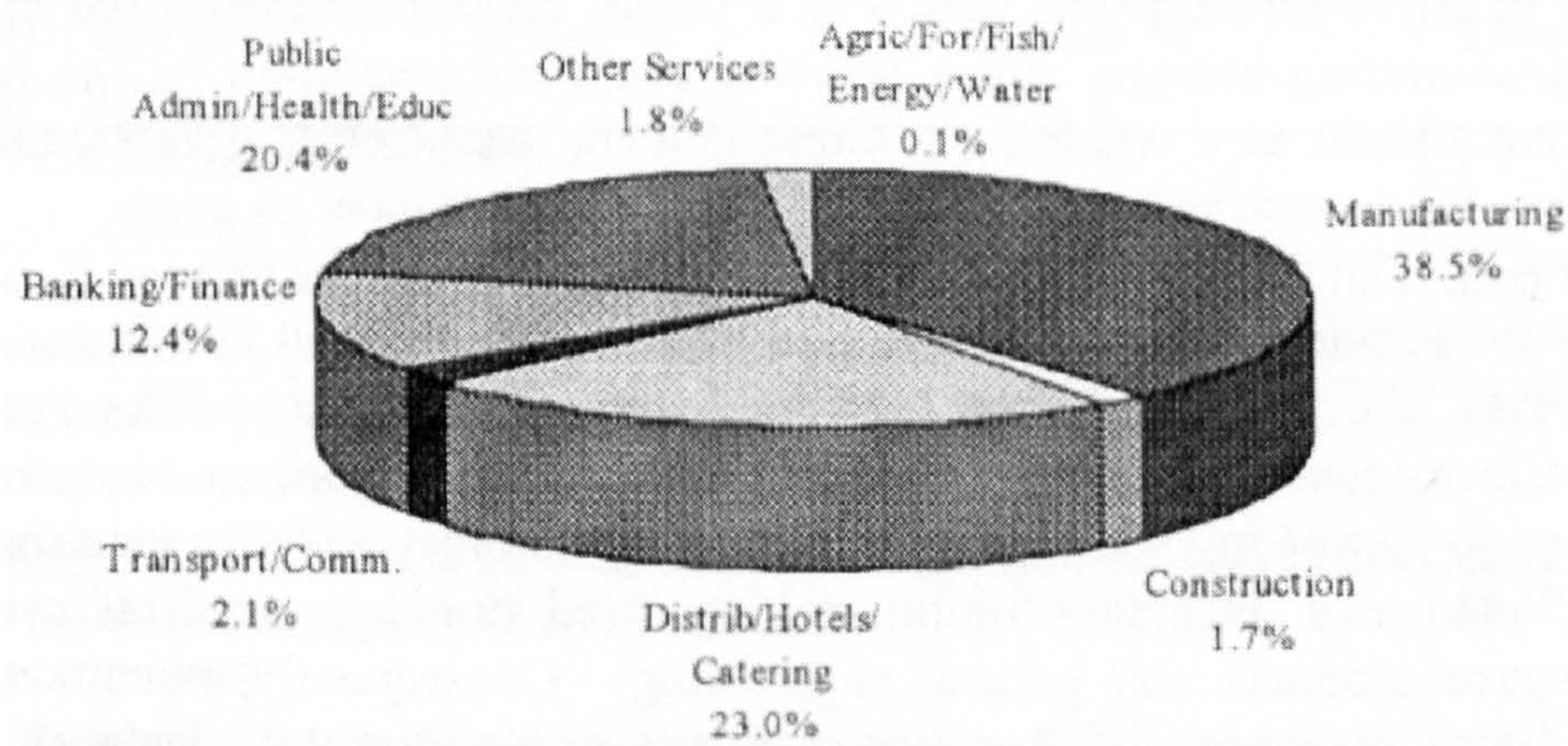
The following sections describe the key characteristics that have an impact on the diffusion of Japanese work systems to Nissera UK that is located on a greenfield site. The discussion is structured along the same lines as that for the brownfield site. Attention is paid to the influence of local institutional, organisational (including company) and group characteristics.

5.3 The Local Institutional Context of Nissera UK

Nissera UK was founded in 1988 as part of a strategy to serve major Japanese customers in Europe. Its main product is instrument clusters for automobiles (83 per cent). This is followed by instrument clusters for motorcycles (13 per cent) and construction machines (4 per cent, in 1999).

Its parent company, Nissera, employs 1881 people across eight domestic sales offices and six subsidiaries in Japan. It has plants in the USA, Taiwan and Thailand, in addition to its European operations in the UK and the Netherlands. The UK division is established on a greenfield site in a centre for manufacturing, where the manufacturing base accounts for 38.5 per cent of the jobs in the area (see Figure 5.4).

Figure 5.4 Redditch Employment Sector



Source: Redditch Borough Council, 1998

The service sector in Redditch (in the West Midlands) is not as strong as the manufacturing sector. “West Midlands as a whole is characterised by an above average dependence on manufacturing industry and a below average representation on the service sector when compared with Great Britain as a whole” (Redditch Borough Council, 1998). The employment trends in 1996 for Redditch show that 38.5 per cent of the working population was employed in manufacturing as compared with 18.5 per cent nationally.

A good skills base exists in the manufacturing sector. Statistics on social class by occupation in 1991, broken down along gender lines, show that the highest percentage (17.2 per cent) of the population in total is economically active in the managerial and technical group (see Table 5.3).

Table 5.3 Social Class by Occupation (10% sample, 1991)

Occupational Division	Males %	Female %	Total %
Professional etc. occupations	4.8	0.6	2.7
Managerial and technical	21.4	13.3	17.2
Skilled occupations (non-manual)	7.2	22.6	15.2
Skilled occupations (manual)	27.2	3.7	15.0
Partly skilled occupations	15.8	14.1	14.9
Unskilled occupations	2.9	3.2	3.1

Other divisions include armed forces, on a government scheme, and economically inactive individuals such as the retired.

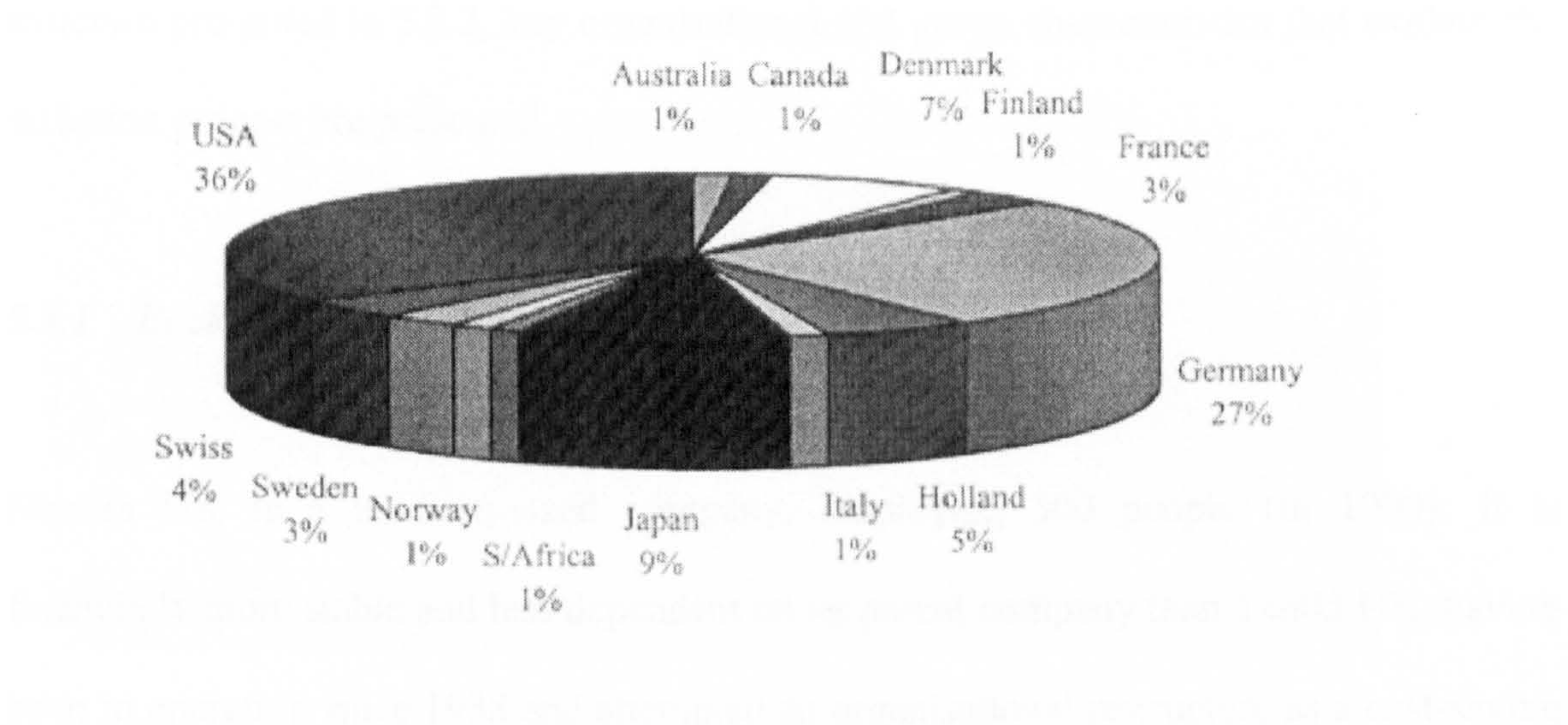
Source: Redditch Borough Council, 1998

Table 5.3 indicates that the higher proportion of economically active males is in the skilled manual group. The highest proportion of females is in the skilled non-manual group.

The strong manufacturing base in Redditch has meant a strong government initiative for or inward investment in the area. Redditch is within the Department of Trade and Industry Regional Selective Area for assistance to businesses (Department of Trade and Industry, 1995a). Furthermore, an inward investment survey carried out in 1995, highlights Redditch as successful in attracting foreign investment with over 60 overseas companies representing 10 countries, such as AT&T Istel (USA) and Heller Machine Tools (Germany). The largest number of businesses, as can be seen in Figure 5.5, is from

the United States (36 per cent in 1999). Japanese companies compose the third largest body of investment in the area (9 per cent), ranking second after the US in job creation (21 per cent).

Figure 5.5 Overseas Companies in Redditch



Source: Redditch Borough Council, 1998

An employers survey in 1997 shows the reasons for moving to Redditch as being ‘larger premises’ and ‘more suitable premises’, 71.7 per cent and 19.9 per cent respectively. The concentration of the automotive sector in the West Midlands attracts suppliers wishing to be closer to their customers. Hence, ‘access to markets’ (9.8 per cent) is another significant factor for companies to locate in Redditch.

As regards the level of industrial dispute in the West Midlands, it is seen as much worse than, for example, the South West region in terms of the working days lost per 1,000 employees through strikes and stoppages. According to the Office for National Statistics

(1999), working days lost per 1,000 employees between 1991 and 1998 ranged from 7 to 56, compared with the industrial average of 10 to 57 over the same period.

The section below provides a detailed description of the degree of implementation and internalisation of Japanese knowledge-driven work systems at Nissera UK. As with the structure presented in 5.2.2, key organisational and group characteristics that explain the diffusion process are presented.

5.3.1 Background to Nissera UK

Nissera UK is a medium-sized company, employing 300 people (in 1999). It is financially more stable and less dependent on its parent company than Teniki UK, having been in operation since 1988 and attempted an organisational restructure as a cost-saving measure in 1997.⁶⁵ There is a high level of implementation of Nissera practices in the subsidiary firm. The composition of its senior management team changed during the initial years of its foundation from 60 per cent Japanese employees to the current six per cent. There are 12 Japanese managers—two senior directors, eight managers in the engineering area and two managers in the financial area—serving liaison roles between the subsidiary and parent company. The Japanese MD, with a production engineering background was succeeded by an MD with a finance background in 1997. There are no Japanese expatriates in manufacturing or logistics. Production management and supervisors are predominantly British and recruited locally. “From the start, the

⁶⁵ Nevertheless, it has not achieved the economies-of-scale that warrants technology diffusion feasible due to its low volume and variety.

workforce was all local. Management structure was mostly Japanese. From day one, it was planned that British managers would be selected to fill in the roles occupied by the Japanese over time” (British Production Manager, 30 July 1999).

Nissera UK is claimed to devote efforts to recruiting relatively qualified workers by British standards. This is said to be a group most likely to absorb and adapt to a new way of working, that is continuous improvement in quality and reliability.

5.3.2 Organisational Characteristics

5.3.2.1 Organisational Structure: The Shift to Team Structure

Nissera UK’s experience of a shift from traditional authority relations to management of work teams on the shop floor was realised in 1997. The shift to a team-based structure was seen as essential given the plunge in profits in 1995 and 1996. According to the General Affairs Department of Nissera (e-mail sent on 20 October 2000):

From 1993 to 1996, sales rose satisfactorily but profits were getting worse. Profits in 1995 and 1996 fell sharply because of the strong Yen and the failure to localise main printed circuit board (PCB) assembly. After that year, 1998 and 1999 marked the best sales in the past due to support from Nissera⁶⁶ and the reduction in the value of the Yen (see Appendix VI for the sales and profit trends between 1993 and 1999)

The factory, which is composed of five sections—moulding, PCB production, print shop

⁶⁶ This support was in the form of delegating responsibility for the assembly of PCB and some instrument clusters to Nissera UK. In addition, Nissera engineers were dispatched to the UK plant for a period of time

and case assembly—has seven assembly and two sub-assembly lines that are laid out in a cell structure.⁶⁷

One of the problems with the old structure was that too much authority was placed in the hands of the charge hands. There was a wide span of control over hourly-paid workers.

We had supervisors, charge hands and operators. When the supervisor was out, the charge hand would take over the role. Charge hands, and this was virtually all of them, when the supervisor was off line, would not produce to meet the downturn. The job of a team leader involves more of man management and improvement activities. And we pay them hell of a lot more.

(British Production Manager, 30 July 1999)

Under the new structure, senior team leaders are held responsible for all aspects of the production area, with an emphasis on championing continuous improvement. As most of the supervisors and charge hands, who were interviewed for team leaders and assistant positions, still serve the company, there is the feeling among the operators that there has merely been a change in titles.⁶⁸

Operators perceive team leaders as above the work group rather than as members of the group. For example, quite a number of operators (especially those with five to 10 years

to increase productivity, and to reduce 'quality failure cost'.

⁶⁷ An exception to this is the youngest (three year-old) line, which has a more visible line structure.

⁶⁸ Charge hands' responsibility, under the new system, encompasses support to each cell by ensuring that all materials and equipment are readily available for ongoing production. As opposed to the structure at Nissera UK, the parent company in Japan has a separate group of workers for the line-feeding function. This group, labelled as the parts delivery group, serves 11 lines and nine sub-lines, and is composed of five members. The members have their own itinerary, where each member is assigned the role of delivering parts to a particular line.

experience at Nissera UK) claim that there is no real difference between a team assistant and a charge hand. The fluid job descriptions of operators, enhanced by multi-skilling, are not applicable to team leaders and assistants. Unlike the situation at the parent company, team leaders and assistants have clearly defined responsibilities and their positions are treated as managerial ones at Nissera UK. This is reflected in the British Production Manager's (30 July 1999) claim that "team leaders do not do the work. As long as they make sure the system is in, what comes out is efficiency, cost and quality".⁶⁹

Nissera UK's adoption of a team-based structure has, to a certain degree, created the team spirit essential for operational improvement. In spite of the challenges faced, Nissera UK has been more successful than Teniki UK in running team-based activities. This is further exemplified in the following section.

5.3.2.2 Organisational Culture: Commitment to Quality Improvement Schemes

Nissera UK aims to instil a continuous improvement culture through total quality control methods, such as the Quality Control Initiative (QCI), employee suggestion scheme, discipline in the workplace, Total Productive Maintenance (TPM) and '5C housekeeping' principles. Operators believe that the suggested quality improvement ideas are good, but are unwilling to become involved in such schemes due to what they perceive as an unfair reward system. This is a problem associated with the way local management administers the QCI.

⁶⁹ A Japanese Electronics Engineering Manager at Nissera (14 April 2000), who has worked in the UK for five years, argues that "UK needs exact job description but, for Japan, this is not the case. Maybe it is necessary to make one's task clear [in the UK]". This is also supported by a manager in Corporate Planning

We were forced to go on this course [on quality circles]. They called it 'family circle'. It is a big joke. Everything is a joke. It could be better if they were straighter with us. As long as we are concerned, they have deceived us. They will start with something and if it does not suit them, they will change it. (Operator in cluster assembly)

Operators felt that they were deceived when three members of the QCI team were sent to Japan as a reward for their winning process-improvement idea. They were verbally given assurance that the whole group would be visiting the parent company in Japan. However, this plan could not be executed for financial reasons.

Sending the whole team to Japan was never going to be the case. Some of those teams had 12 people. It costs immense amount of money. Do not get me wrong. The communication was not perfect. There was an assumption made. We, as management, took full responsibility that it was our fault.

(British Production Manager, 30 July 1999)

Although there seems to be willingness to learn and change on operators' part, local management style inhibits operators' commitment to and satisfaction with the diffused practices. A cluster assembler claims "ideas are good but the outlook, seeing it through is crap".

Emphasis on Training

The training, supervisory and advisory roles of Japanese management were reduced over the years at Nissera UK as the phase of implementing new management systems and

and Control at Nissera (14 April 2000): "UK provides job descriptions even for small tasks".

practices in the organisation were completed. Japanese expatriates were directly involved in the training of British supervisors and workforce in the initial years of the company's establishment. Information was passed on in the form of job instructions rather than formal off-the-job training. Furthermore, job instructions were demonstrated to operators. "Although they had more strict rules, Japanese managers would help you work. They would go to the source of the problem. British managers make up titles and waste money" (operator in PCB manufacture). A good practice would be demonstrated, and the purpose and the effectiveness of the action would be fully explained by the Japanese manager serving the role of a trainer. This explanation would be repeated as many times as necessary. The operator would be allowed to mimic the action and be observed. A cluster assembler in Cell5 (16 June 1999), who had been trained or 'shadowed' for three months by a Japanese engineer in the initial years, claims:

the Japanese guy was very patient. He would tell you all you needed to know. He explained things like angle setting, generally about the equipment. If there was a reject, it would go to the line that produced the fault for rework. Japanese look for the source of the problem. In the UK, you are just told what to do.

On-the-job training (OJT) is currently not given such emphasis at Nissera UK. Due to the replacement of Japanese expatriates with local management, operators are no longer shown the flow of the process for an integrated understanding of the factory operations and the way individual tasks contribute to the overall outcome. They only receive a few hours of lecture on regulations and contract terms and are, then, sent for OJT. This deterioration in the emphasis given to training hinders the internalisation of the parent

company's work systems by newcomers to Nissera UK.

As with the labour turnover problem at Teniki UK, Japanese management at Nissera UK feels that there is no opportunity to sustain the training system set by the Japanese due to the lack of stability in Nissera UK's employee base (Japanese Quality Assurance Manager, 13 April 2000, and Japanese Assistant Finance Manager at Nissera, 14 April 2000). "Employees constantly change. Of the 100 UK employees that were trained at the start of operations, only three remain at Nissera UK" (A Quality Assurance Manager at Nissera, 13 April 2000). This has a negative impact on know-how diffusion from the parent company.

5.3.2.3 Control Mechanism: Degree of Involvement by the Japanese

Nissera is heavily involved in its UK subsidiary's decisions over the implementation of continuous improvement techniques and philosophies and provision of technology, new machines and products, as well as finances for investment. Nissera UK is required to report to Nissera discussions on major managerial issues, such as annual shareholder meetings and significant organisational changes. These are then discussed within the framework of efficiency checks against investment. Proposals are then summarised and reported to the board of directors. Moreover, up until 1997 (when the Japanese ex-MD's contract ceased), there was high involvement in day-to-day running of the factory. However, commitment on the part of Nissera to broad range and long-lasting effort to create the dedicated human and organisational capabilities decreased as Nissera UK

failed to develop its own knowledge base and satisfactory financial results.⁷⁰

First time I was in the UK, we brought know-how with documentation and information [such as quality standards, instruction manuals, QC process charts and drawings]. Japan did not send any know-how after that. Their manufacturing is old and manual, so we cannot transfer know-how.

(A Japanese Quality Assurance Manager at Nissera, 13 April 2000)

One of the reasons for the limited diffusion of know-how is the financial outcome of Nissera UK. “Since 1993, Nissera UK has had bad profits. They could not manufacture anymore. Nissera brought manufacturing, such as product machine part, from Japan to the UK. Since then, Nissera has minimised know-how transfer” (Japanese Quality Assurance Manager at Nissera, 13 April 2000).

Approach to Discipline

Nissera UK’s approach to discipline, as part of its Kaizen philosophy, is more forceful than that at Teniki UK. This is applicable in particular to housekeeping on the shop floor. The company’s emphasis on ‘5C housekeeping’ principles—classifying, clarifying, cleanliness, clean-up and custom—is based on its belief that it helps create a visual workplace with visual displays and visual control in time for corrective actions to be instituted immediately. For example, “the ex-MD used to say there is dirt on the floor. At the same time, we might have run out of parts on a line. The second issue is more important for the British. On a well-organised line the next biggest issue is cleanliness”

⁷⁰ Nissera’s subsidiary firms are expected to produce profits in their fourth or fifth year of operation. “We invest. Our profit is generated from the products we manufacture. We sometimes try to forget about profitability. For the first three years, we do not expect a profit” (Japanese Manager in Corporate Planning and Control at Nissera, 14 April 2000).

(Cell2 Team Leader in Cluster Assembly, 14 June 1999).

It is argued that managers used to closely ‘police’ the operators in the past (until 1997 when the ex-MD was succeeded) to inculcate the housekeeping routine into them. As the Japanese expatriate management was gradually replaced with local management, the attention paid to these principles became weaker, and so did the dedication to housekeeping principles. Nowadays, “there are random checks by management twice a month, but we always know they are coming. The team assistant is always running around cleaning the place” (cluster assembler).

In spite of the rather coercive, strong approach to discipline, workers at Nissera UK displayed a higher level of acceptance of alternative work systems than those at Teniki UK where the approach to discipline was much more lenient.

Level of Trust and Communication between the Japanese and UK Staff

The level of trust between the Japanese and UK management is low due mainly to the Japanese-perceived low level of competence at Nissera UK. “They do not understand our product [instrumentation]. They understand the manufacturing process, how to move the instrument, but cannot see the bigger picture, how to fit the product” (Japanese Quality Assurance Manager at Nissera, 13 April 2000). One of the counter-measures for this problem is given as the transfer of people for training or problem resolution purposes. This aids the Japanese in understanding the overseas context better. “The UK employee asks ‘why’ questions. A manual is not enough to explain the process. UK people can

understand when the reason is given. The Japanese never ask ‘why’. So I had the chance to learn by rethinking the process” (Japanese Production Manager at Nissera, 13 April 2000). This indicates that in order for the Japanese work systems to work effectively, both tacit and explicit components need to be diffused to the context of the adopter firm. (Further discussion on this matter can be found in Chapter 6).

Low trust is also associated with failure to deliver promises and a communication barrier.

Japanese management staff hold everything back. They do not open information to UK staff. It is a communication and a trust problem. Japanese do not perceive UK managers as capable. They have limited capability. When we ask questions, UK staff come back with an answer after a week or so. They do not care about the due date.

(Japanese Quality Assurance Manager at Nissera, 13 April 2000)

British staff are seen as constantly changing delivery dates rather than pushing to meet the schedule.

The lack of communication between engineering and management levels at Nissera UK and its parent company is due in part to the language difference⁷¹ and the perceived lack of information sharing on the part of Nissera. “I do not feel that the relationship between us is very good. Nissera UK seems to feel that they lack technology-related information and sufficient support from Nissera, while Nissera seems to feel that they do not receive customer requests and requirements from Nissera UK properly” (Japanese Electronics

⁷¹ For example, during the period that a Nissera Electronics Engineering Manager (14 April 2000) was working at the UK plant (1995-1998), he “did not have enough capability to translate Japanese into English. I did not want to communicate with the UK staff [due to my poor spoken English]. I like writing in English. I always used mail to request for a task to be completed, because I needed a record [for Nissera]. If

Engineering Manager at Nissera, 14 April 2000). This hinders the Japanese willingness to diffuse tacit knowledge. However, the level of trust on the part of the UK workforce on the shop floor towards the Japanese management is higher than that found at the local management level at Nissera UK, as well as that at Teniki UK.

Nevertheless, Nissera is making an effort to learn from its UK subsidiary. As with Teniki members, Nissera members cite cultural differences and European market preferences as areas for learning. For example, Nissera is studying European PCB design to reduce manufacturing costs. Electronic components, such as Integrated Circuit (IC) chips, are being introduced to reduce the number of electronic components.

5.3.2.4 Technology Diffusion

Nissera UK is not as technologically advanced as its parent company. Nissera has a much wider product range than its UK division. For example, it is heavily involved in LCD production, and directs development techniques for automobile products to new products, such as water heaters and air conditioner remote controls. On the other hand, its UK subsidiary is only responsible for PCB production and instrument cluster assembly. Nissera cites two reasons for the limited diffusion of technology. Firstly, Nissera UK is not perceived as possessing the knowledge necessary to develop its own production lines.⁷² Secondly, “Nissera UK has low volume and wide variety. It is difficult to introduce new technology” (Japanese Production Manager at Nissera, 13 April 2000). Although the assembly itself is not very different from that at Nissera, support functions

I communicated verbally, the working relationship would have been better”.

⁷² Assembly lines are developed and transferred to the UK plant by Nissera.

such as purchase, inventory, quality assurance, production engineering and maintenance⁷³, are quite different.

It is claimed that “Nissera tries to disclose the latest information on R&D technology⁷⁴ to the Technical Centre in order to support Nissera UK’s sales activities (Japanese Electronics Engineering Manager at Nissera, 14 April 2000). However, Nissera UK only produces ‘profitable’ products rather than creates advanced product technology. “They do not need advanced technology or know-how. They cannot meet customers’ advanced expectation” (Japanese Quality Assurance Manager at Nissera, 13 April 2000). The difficulty in the diffusion of technology is seen as associated with UK staff’s lack of capability and willingness to learn.

Even if we want to transfer [know-how], who can take it? If I want to transfer everything to the UK, they may need three times more persons. If there is a mechanical engineer, he only knows the field [of mechanical engineering]. He does not understand electronic engineering. In Japan, an engineer will know both.

(Japanese Quality Assurance Engineer at Nissera, 13 April 2000)

According to Japanese management, Nissera UK needs greater financial resources and number of employees, larger facilities and a grasp of technique or insight into the integrated process of manufacturing. Nevertheless, on the whole, Nissera UK has been more diligent in its emphasis on the diffusion of both tacit and explicit elements of

⁷³ “For example, production engineering’s responsibility also includes maintenance [in the UK]. In Japan, these functions are separate” (Japanese Production Manager at Nissera, 13 April 2000).

⁷⁴ For example, the PCB design data or CADAM are transferred electronically to the Technical Centre at

continuous improvement schemes.

5.3.3 Group Characteristic: Attitude of Teams towards Continuous Improvement Schemes

Workers' response to continuous improvement schemes differs on the basis of each team leader's management style, size of the team, its target level and the training offered to team members.

Although Nissera UK is perceived by management as proficient in quality management, researcher's work experience in the factory shows inconsistency in the priority given to quality standards by operators. "Getting assembly operators to do what you want is difficult in the UK. In Japan, they are very dedicated, 100 per cent committed" (Cell3 Team Leader in Cluster Assembly, 15 June 1999). For example, quality checks in Cell2 are flimsy. The SPC data are manipulated to give the impression to management that measurements fall within control limits when they are clearly outside tolerance levels. Moreover, quality tests that take seven minutes to complete on fuel and temperature indicators are halted after two to three minutes as the seven-minute duration is found to be too long. Similarly, forms that are filled in on Cell2 rejects and reworks are frequently recorded as 'other supplier's fault' rather than 'self responsibility' or 'machine fault'. The low sense of personal liability felt in this cell tends to have a negative impact on the overall quality of products and customer relations.

We supply many products to [our biggest customer]. We know that the 100

Nissera UK.

components from Nissera will be good. We cannot be so sure at Nissera UK. The control system is not so different from Nissera. For instance, the process quality control chart is the same as that at Nissera. Over the past two years we have tended to go back to the Japanese parts. Every single part needs to meet quality standards. In the UK, the attitude is, out of million, surely there can be few defects. There is a wider tolerance level in European supplier context. This is not the case in Japan. Customers, unlike in the UK, expect zero defects in Japan.

(Japanese Quality Director at Nissera UK, 13 September 1999)

Nevertheless, there are certain cells that display a strong sense of commitment to continuous improvement schemes. This is especially visible in one of the low-target assembly lines, Cell5. This cell is composed of a small group of six people who work on interdependent tasks in a non-competitive environment. Its members produce in batches by working collectively through the first few stages of the assembly line in the first half of the working day. They move down the line in the second half and increase their pace of work to meet the target for the day. The cell demonstrates a good team culture due to its low target, long working relations and task sharing among its members. Some of the operators were trained by Japanese expatriates in the early years of Nissera UK's operation. As the concerned line is five years old, it cannot be argued that the technical sophistication of the line is a major influence on the effectiveness of the team.

The PCB section displays a different response to continuous improvement schemes from the assembly section. Quality control principles are not enforced to the same degree in this unit. For example, PCB operators are not evaluated against the '5C principles'. There is a more relaxed atmosphere that allows operators to joke and talk at work, despite the

more strongly felt hierarchy in the area. As the department has recently taken on more work, it is felt that there is no time to maintain machines or to implement the '5Cs'.

Some of the operators at Nissera UK see '5Cs' as "basically cleanliness, [it] is more cosmetic than anything else" (Cell1 and Cell3 Team Leader in Cluster Assembly, 14 June 1999). The Japanese expatriate management feels that this is due to poor supervision at Nissera UK, as compared with that at parent company. "If a supervisor does not explain or check, the operator will just pass the equipment [even if the quality is low]. In Japan, every operator has to clean self-area [including the head office staff]. In the UK, a separate company does the cleaning. I explain, but it is difficult for them to implement" (A Japanese Production Manager at Nissera, 13 April 2000). In spite of the Japanese-perceived low commitment to QC programmes, Nissera UK operators have internalised the QC principles to a greater extent than Teniki operators. This is related to greater financial stability and high and direct involvement of the Japanese in operator training. Moreover, the skills level of Nissera UK workforce is higher than that at Teniki UK, and the company is located on a greenfield site: "we can easily select manufacturing staff. People can understand our requirements...In the beginning, we asked for a lot of help from the local staff, so we could not provide job descriptions. A brownfield site is more disadvantageous from that perspective" (Japanese Corporate Planning and Control Manager at Nissera, 14 April 2000).

5.3.4 Overview

Table 5.4 summaries the findings on the characteristics that have an impact on the

diffusion of Japanese knowledge-driven work systems to Nissera UK. Initiatives taken by local and Japanese management to introduce alternative work systems at Nissera UK are much stronger than those taken at Teniki UK. This is presented as 'high degree of implementation' in Table 5.4. The degree to which alternative work systems are infused with value and accepted by workers at Nissera UK is higher than that at Teniki UK. However, there is room for improvement as is described in section 5.3.2.2. Hence, this is presented as 'medium degree of internalisation' in Table 5.4. The local institutional context includes location on a greenfield site in a centre for manufacturing, high skills base in manufacturing⁷⁵, high inward investment and a high level of industrial dispute. The medium-sized UK firm was founded in 1988. It has a perceived low to medium level of financial dependence on Nissera. Nissera UK constitutes a subsidiary relationship, and is involved in assembly of car components. Unlike that at Teniki UK, it has a sufficient Japanese expatriate management base to dedicate resources to training the UK operators. At the organisational level, there was a shift to a team-based structure in 1997. This was accompanied by a medium level commitment to building quality and highly disciplined work and quality assurance procedures. The emphasis on training was high, and the approach to discipline was strong until 1997. Both deteriorated thereafter. Moreover, the Japanese involvement in strategic decisions, as well as shop-floor activities, at Nissera UK had been high and direct until 1997. The low level of perceived capability at Nissera UK generates relatively low trust (labelled as low to medium in Table 5.4 in comparison to Teniki UK) and creates a communication barrier between the Japanese and UK staff. Furthermore, there is low technology diffusion from the more technologically advanced

⁷⁵ However, the skills level is lower than that at the parent company. Hence, it is categorised as 'medium' in Table 5.4.

parent company. In general, there has been an effort to diffuse tacit and explicit components of continuous improvement schemes, high number of Japanese expatriates aiming to diffuse these components and the financial resources necessary for their diffusion to Nissera UK.

Table 5.4 Key Characteristics that have an Impact on the Implementation and Internalisation of Japanese Work Systems at Nissera UK

	Key characteristics	Nissera UK
<i>Local Institutional Level</i>	Location: Site Area	Greenfield Centre for manufacturing
	Skills base	High in manufacturing
	Inward investment	High
	Level of industrial dispute	High
<i>Company characteristics</i>	Size (in 1999)	300 employees
	Age (year of establishment to data collection)	11 years (1988-1999)
	Nature of work	Assembly of instrument clusters for automobiles (83%), motorcycles (13 %), construction machines (4%) (in 1999)
	Form of ownership	Subsidiary relationship, parent company is not owned by a car manufacturer
	Number of Japanese expatriates and their roles in the UK	12 (including MD) Mainly director role
	Skills level of the workforce/ Symmetry of expertise with that of the Japanese firm	Medium
	Financial dependence on parent firm	Low-Medium
<i>Organisational Level</i>	Nature of diffused practices - Organisational structure	Shift to team structure in 1997
	- Organisational culture: Commitment to continuous improvement schemes * Emphasis on training	High (till 1997)/Medium thereafter

	- Control-related: Degree of involvement by the Japanese * Approach to discipline * Trust between the Japanese and UK staff * Communication barrier	High, Direct Strong(till 1997)/Mediocre thereafter Low-Medium High
	- Technological: Technology diffusion	Low
<i>Group Level</i>	Attitude of teams towards the work systems of the source firm: level of commitment	Medium
<i>Outcome</i>	Degree of - implementation - internalisation of Japanese work systems at the UK adopter firm	High Medium

Source: See text

The following sections outline the characteristics that have an impact on the diffusion of Japanese work systems to a technical collaboration site at the local institutional, organisational (including company) and group levels.

5.4 The Local Institutional Context of the Rover-Honda Collaboration Site

The strategic alliance between the Rover Group and Honda was formed in 1978.⁷⁶ The decision to forge a collaboration between Rover, the UK-based car manufacturer, then called British Leyland Motor Corporation (BLMC) and the Japanese company, Honda Motor Corporation, was made as part of a strategy to increase economies-of-scale. Rover was looking to reduce the cost of developing and maintaining a complete and viable product range and help remedy its historic problems with product quality⁷⁷ (Fairhead,

⁷⁶ Rover members see the start of their collaboration with Honda as 1978, as the talks began in that year. However, Honda members see it as 1979, which marks the year in which the official agreement was made.

⁷⁷ Rover was marked by 'disoriented' production management, high turnover particularly between 1976-1978 (Clark and DeBresson, 1990).

1998), whilst Honda wanted to increase its sales volume in Europe.

At the time of the collaboration, there had been a decline in the uncompetitive British manufacturing sector, which produced dramatic changes in the level and composition of employment. For instance, between 1970 and 1983, Britain lost 2.4 million manufacturing jobs (Hirst and Zeitlin, 1989). West Midlands, being the traditional home of Britain's car manufacturing base had taken the lion's share of this loss. Problem with management was seen as a crucial cause of the perceived manufacturing failure.

The British management problem is that, within their area of discretion, British managers consistently take poor decisions about the priority of different problems and execute their strategies in a way that is generally inept...Before the 1979-83 recession it was possible to blame poor organisation of production on the workforce and the unions. But that excuse is no longer plausible, The organisation of production inside the factory is now clearly the prerogative of management.

(Hirst and Zeitlin, 1989:82)

It is argued that the location of Rover's Longbridge plant in an old industrial district, which is characterised by declining heavy or primary industries, strengthens its bargaining position in view of the levels of unemployment in the area (ibid.).⁷⁸ Under the circumstance, workers could be expected to be more willing to accommodate a new workplace regime out of economic necessity.

⁷⁸ The unemployment in West Midlands and Great Britain as a whole (9 per cent) have been consistently higher than that in, for example, the Telford work area (7.8 per cent) (Wrekin Council, 1994 in Sharpe,

The West Midlands has witnessed an attraction of Japanese investment of mainly an FDI nature in the automotive sector in the 1980s. This has meant a high government interest in investment in the area. There was immense government support for the Rover-Honda collaboration. For example, by 1982, “government financing stood at £1.4 billion and there had been substantial private funding” (Autocar, 1988).

Labour relations in the West Midlands have been described as significantly worse than those in new towns, such as Telford, with high levels of industrial dispute experienced in the West Midlands over a period of 1986-1993 (Sharpe, 1998a). At the organisational level, there has been heavy unionisation at Rover. For example, Sir Michael Edwards, who was offered the job of executive chairman of British Leyland in 1977, “took a tough line with the trade unions, in particular with the powerful shop stewards, who were obviously not happy about massive redundancies among their members” (British Motor Industry Heritage Trust, 1997:58).⁷⁹

The section below provides a detailed description of the degree of implementation and internalisation of Japanese knowledge-driven work systems in a collaborative project between Rover and Honda that constituted ‘side-by-side’ work rather than an ‘arm’s length relationship’. Key characteristics that had an impact on the implementation and internalisation of Honda-diffused practices at the organisational and group levels over the development of the R8/YY project are discussed. This discussion also includes the

1998a).

⁷⁹ “Several factories were closed, starting with the Triumph factory at Speke on Merseyside, followed by the old MG factory at Abingdon...and even the new Rover SD1 factory at Solihull, later brought back into commission for expanded Land Rover production” (British Motor Industry Heritage Trust, 1997:58).

boundary-spanning role of the liaison members and the impact of company size, age and the approach to development adopted by the Japanese partner on the diffusion process.

5.4.1 Background to the Rover-Honda Alliance and the Rover 200/Honda Concerto Project

“Over its history, the [Rover-Honda] alliance has evolved from a limited licensing agreement to a multifunctional relationship including joint development and production and a 20 per cent share exchange between the two companies” (Faulkner, 1995:146). At the start of the collaboration, both companies were on an equal footing in terms of sales volume.⁸⁰ However, Honda was profitable and growing rapidly, while Rover was making a loss and produced projects that had a negative impact on its corporate image. Honda carried the image of the most innovative Japanese manufacturer in the mid-1980s. “A lot of their technology came from their motorcycle technology. That affected the way they approached car design” (Rover Chief Designer, 14 May 1999). Moreover, technology, in terms of producing front-wheel drive, and company size matched those of Honda.

Honda had the characteristic Japanese TQC attitude to manufacturing, which was diffused to Rover over a lengthy tuition period. According to Faulkner (1995), Honda had the technology to gain the necessary cost economies in unit terms and the financial strength to collaborate with Rover in the production of new models. “There was the

⁸⁰ “Rover had a weakness in its lower sector model range. The engineering resource and the financial reserve were lacking. Under the circumstance, a Japanese partner was the most appropriate for they were seen as perfected the car manufacturing process. Nissan would have been a more appropriate partner to select, for Austin Morris had a long relationship with Nissan. However, there was a difference in size. Nissan’s bulk in terms of its sales volume would have been overwhelming for Austin. In the case of Honda, they were short of 1 million produce. This was similar to that in Rover” (British General Manager of Honda Collaboration at Rover, 15 April 1999).

recognition within the British Leyland Group that we were a small company in what is a huge market and that we could not financially afford to go developing new cars on our own. So I think we were mostly financially driven” (Principal Electrical Engineer G, 12 May 1999). Quality and other learnt practices and philosophies were seen as useful by-products of the collaboration.

The first project, built under a limited licensing agreement by BLMC in 1979, was the Triumph Acclaim. According to Honda, this was the first true example of large-scale parts procurement overseas. Austin Rover Group (which BLMC later came to be known by) made changes in materials configuration and manufacturing processes in order to ease the process of procuring parts in the UK. This negatively affected quality. Compromises meant that the Triumph Acclaim’s quality was not as satisfactory as that of Ballades produced in Japan. Nevertheless, this model generated good sales in the UK and received favourable reviews on the continent and, hence, was deemed a success.⁸¹ The next collaborative work between the two companies was in 1982 on the Rover 800/Honda Legend. This “resulted from Rover seeing the need to replace its SD1 range of large, executive cars and Honda’s keenness to enter the executive car market where it had as yet no presence” (Ohtani *et al.*, 1997:67). As the requirements of the two companies were different, particularly in terms of design standards and the problems posed by factory conditions and differing market demand for features, it was difficult to reach a final agreement. There was a shift in design responsibility of the body from Rover to Honda, as “it was extremely difficult to get Austin Rover Group to make changes in

⁸¹ This is an extract from Honda’s internal document, a report based on a lecture given to Honda US expatriates in the mid-1980s.

design of the car's body to accommodate changes in the engine, so Honda ended up taking over the design of the body in mid course".⁸² The Rover 800/Honda Legend project was followed by the Rover 200/Honda Concerto collaborative work in 1985. It involved a high level of common componentry, such as exterior skin panels, interior door panels and facia, as both cars were to be manufactured at Rover's Longbridge plant. Confidence had grown by then and the alliance had matured into a much more involved collaboration. Hence, the passage of time and the positive experience on the previous collaborative projects (which is labelled as company age in Table 5.5) were favourable to the internalisation of Honda practices at Rover. For example, based on the experience of developing an earlier project (Rover 800/Honda Legend)⁸³, it was realised that joint team meetings were essential on the R8/YY project (Japanese Engineer at Honda HA, 29 March 1999). The collaboration was seen as taking the form of Rover doing everything on its own to Honda delivering everything. In this framework, Rover 200 was perceived as a model that involved genuine joint work⁸⁴ (see Appendix VII for a list of key events in the Rover-Honda relationship).

Whilst there have been a series of collaborative projects over the course of Rover's

⁸² The body of the car had to accommodate Honda-designed engine. [This is an extract from Honda's internal document, a report based on a lecture given to Honda US expatriates in the mid-1980s].

⁸³ The factors that influenced failure in this project, from Honda's perspective, were: i) Rover was three-four times slower than Honda in turning out a finished prototype, ii) UK suppliers were not equipped to supply prototype parts, iii) Honda ended up producing prototype parts as well, iv) As the locally purchased content had to be 60 per cent for the first year and 80 per cent in the second, production of many parts developed in Japan had to be shifted to the UK or a location in the EC. However, due to requests from ARG and differences in suppliers, there were many cases where the specifications for the parts developed in Japan were not fully met, v) Honda engineers felt that the quality of parts produced in the UK/EC was not satisfactory, whilst Rover found it acceptable, vi) Production of Rover 800/Legend was delayed as European suppliers took a long time to manufacture parts, and vii) Lack of commonality adversely affected ARG plants' manufacturing efficiency and resulted in unstable quality. This eventually became a burden on both companies.

⁸⁴ This is not necessarily the view held by Honda. According to Honda, the Rover 800 project was more of

partnership with Honda, this study focuses on the Rover 200/Honda Concerto (coded R8/YY project by the engineers). It is perceived as the most successful project by Rover engineers and senior managers in terms of the degree of collaboration, quality and process improvements, problem resolution and learning benefits. The R8/YY project was a turning point for Rover in financial terms. It marked the launch of structural and cultural change, such as the Total Quality Initiative, and replaced a core product line at Rover. There was a high level implementation of Honda practices during this period. According to the British General Manager of Honda Collaboration at Rover (15 April 1999), “the success of the model in the market place made a significant contribution to returning Rover to financial profitability. The extent of learning from Honda also reached a peak during the period of R8/YY manufacture” (see Appendix VIII for the benefit scale). In comparison to Teniki UK and Nissera UK, the Rover Group was a large-sized company, employing more than 30,000 people at the time of the R8/YY project. Financially it could afford to launch a structural and a cultural change programme in 1985, whilst, for instance, Teniki UK had difficulty in allocating resources to cultural change. The Japanese partner had a long-term view to development of capabilities at Rover. This was indicated by Honda’s willingness to invest in a 20 per cent cross shareholding arrangement with Rover twelve years after the collaboration was established.

The following sections outline the deep-rooted change of a ‘paradigmatic’ nature that has led to ‘leveraged learning’ during the Rover-Honda alliance.

a 50-50 collaboration. Honda’s design responsibility was perceived in the ratio of 70:30 on the Rover 200.

5.4.2 *Organisational Characteristics*

The *nature* of the diffused work systems also has an impact on the internalisation of practices by UK adopter firms. As it is shown in the following sections, the explicit structural system is more easily diffused to the UK business system than the tacit cultural and control-related systems. (This will be discussed in further detail Chapter 6).

5.4.2.1 *Organisational Structure: The Shift to Team Structure*

The Rover 200/Honda Concerto project saw the initiation of a change in Rover's organisational structure.⁸⁵ There was a shift from functional authority relations to a project-based structure in 1985.⁸⁶

Within a functional structure, Rover would allocate resources to different functions, where individuals would be working on a number of projects. A core expertise could not be sustained within such a structure (British Principal Electrical Engineer F, 21 June 1999). On the other hand, within a project-based structure, engineers who were assigned to teams could consult a central group of expertise upon technical difficulties. A project-based structure was seen as the best way to deliver a project, for technical problems could be solved accurately and quickly. The project could also be delivered to the required quality despite the fact that the components used could not have been tested and approved. However, the project groups ran the risk of becoming insular and their goals

⁸⁵ Rover reverted to a functional structure upon the completion of the R8/YY project.

⁸⁶ Although a project-based organisational structure in an engineering firm differs from a team-based structure on the shop-floor of a subsidiary firm due to the difference in the nature of the work carried out, it is categorised here under the same heading for a comparative analysis. This is based on the assumption that both structural arrangements are founded on a team-based effort to delivering a product, whether it is a car component or a car.

being displaced to the detriment of the corporate objectives (British Design Director, 22 June 1999).

The shift in organisational structure from 'business units' to 'central competencies' created an opportunity to build a team spirit among the engineers. This is ingrained in the saying "you have got a spirit and motivation of not wanting to let each other down. It gives you a bit more drive and impetus" (Design and Development Engineer at Rover, 23 June 1999).

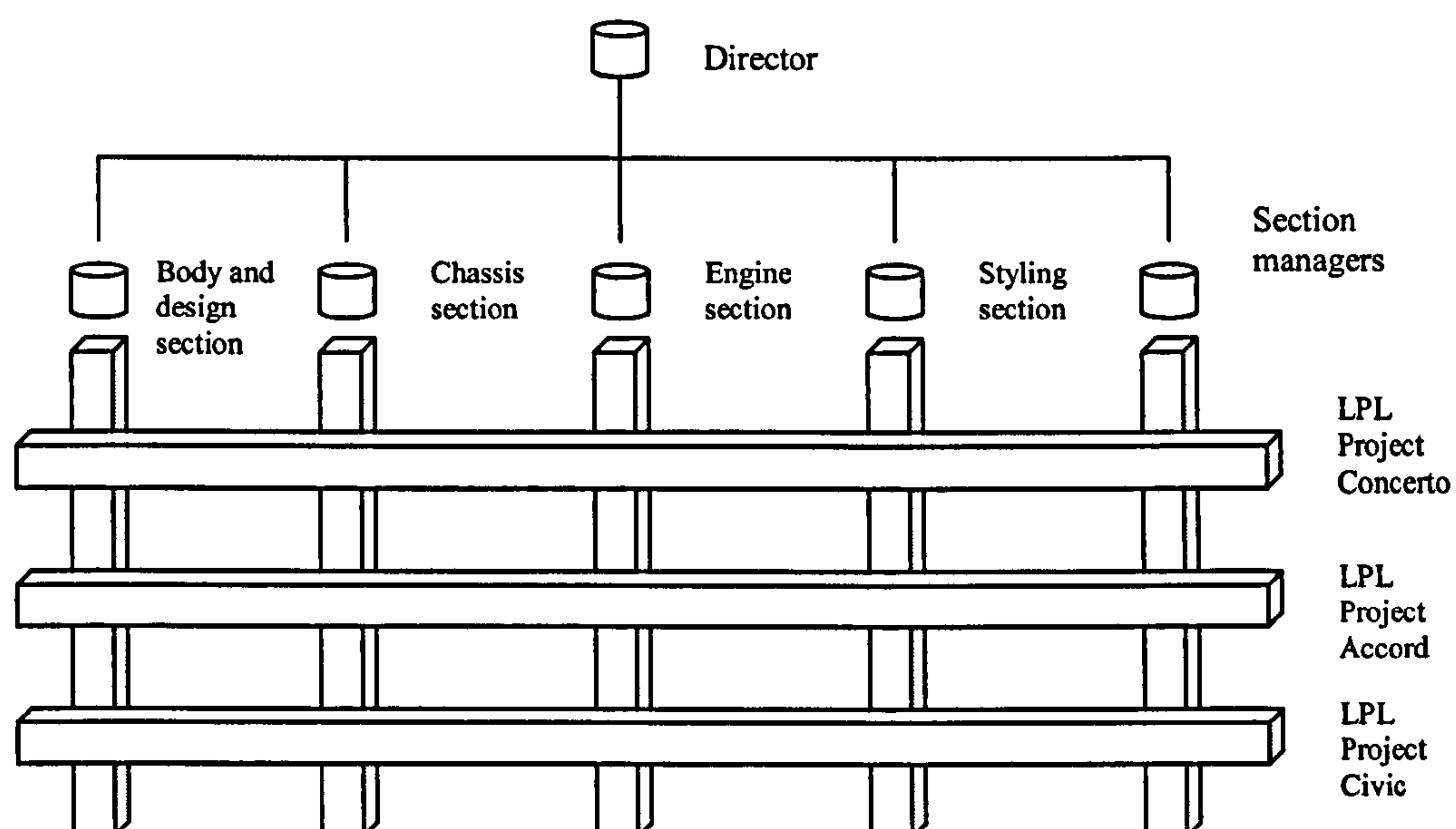
There is something uniting everyone and that is the delivery date. You feel more exposed to the pressures of working for an engineering firm. Whereas in a functionally-based organisation, people are more interested in getting more focused on becoming an expert on their project. There is less of a focus on the actual delivery of a project and more on a delivery of their part. There is less immediate pressure to hit that delivery date and there is a problem of getting people to work together.

(Principal Electrical Engineer K at Rover, 2 June 1999)

A project-based organisation also enabled Honda members to approach Rover engineers directly. Problems with information dissemination, due either to politicking or filtering, could be minimised. "Rover sometimes hired a new manager with high academic qualification, who decided without knowledge [experience]. So we skipped management staff and contacted the engineering level directly" (Japanese Project Manager at Honda, 5 April 2000).

From Honda's perspective, Rover could not implement a project-based structure in the 'true sense of the word'. This implies that even though the diffusion of a structural practice was possible, the method of enforcing the effective operation of the structure (or the source company's meaning of the structural practice) was difficult to diffuse to Rover. Honda felt that functional or section managers at Rover had more control than project managers (see Figure 5.6).

Figure 5.6 Organisational Structure of Rover as Perceived by Honda



LPL: Large Project Leader

Source: Interview with the Japanese Executive VP of Honda R&D Europe, 29 March 2000

There was still a top-down approach and Rover managers continued to be hands-off. It was argued that the Rover directors had more power than the Large Project Leaders. In addition, there were conflicting interests between section and project leaders. The section managers preferred to avoid risk, whilst large project leaders wanted to take risks in

order to develop a competitive, innovative product.

Honda, regardless of its collaboration with Rover, always upheld a project-based structure.

We always have a weekly meeting with every project leader. Rover had a problem, because its body engineers were in Cowley, interior engineers in Canley and other engineers in Longbridge. They tried to gather and established Gaydon [where the design centre is]. Communication then improved. (Japanese Executive VP of Honda R&D Europe, 29 March 2000)

Nevertheless, the timing of the build phases could still not match that of Honda.

We agreed on a schedule. Rover could not understand this schedule, could not understand how to manage or carry out their own job. Honda sets up a project manager to manage the timing. They control the progress of the team. They also receive the services of a support function. [The support function is resembled to oil or lubrication necessary for the effective functioning of a piston, that is the project group].

(Japanese Executive VP of Honda R&D Europe, 29 March 2000)

To Rover, Honda appeared to be able to operate a project-based process, delivering projects at the same time as having specialists (Design Director at Rover, 22 June 1999). Nevertheless, there was a subtle pecking order, in addition to cross-functional teams at Honda.

On the whole, the internal dynamics of a project-based organisation were seen as conducive to solving problems quickly. When a serious problem emerged, project members were summoned to solve the issue immediately. Whereas in a functional organisation, members were less reluctant to immerse themselves in problem resolution.

5.4.2.2 Organisational Culture: Commitment to Quality Improvement Schemes

It was widely recognised that Honda's culture, which was perceived by Rover members as the Japanese culture,⁸⁷ was different from that of Rover, which was seen as reflecting the UK culture. "We are talking about two sets of people that have different thinking processes. We think in a very connected kind of way. The Japanese do not think in a very...where things are like in isolated boxes" (Design Director at Rover, 22 June 1999).

Honda engineers were seen by Rover engineers as involving everyone in decision-making. This was regarded as a more structured way of arriving at conclusions than holding a series of small meetings (Principal Electrical Engineer K at Rover, 2 June 1999). Honda's consensus decision-making process⁸⁸ contradicted Rover's process of arriving at 'hasty' decisions. It was seen by Rover engineers as a 'painful, arduous' discussion process, because, at first, the benefits would not be apparent.

⁸⁷ Although Honda was perceived as a Japanese company by Rover, the company is not a typical example of a large traditional Japanese company. "Honda looks like a US company. We cannot keep the Japanese culture" (Japanese Executive VP of Honda R&D Europe, 29 March 2000) due to the company's global operations. Nevertheless, Honda carries the features of the Japanese culture. This is especially observed in the division of labour. The right-hand duty partition at Honda is not as strict as that at Rover. "In Western companies, it [the right-hand duty partition] is very strict" (Japanese Project Leader at Honda, 13 April 2000).

⁸⁸ It should be noted that the *ringi* method of arriving at decisions does not apply to technical decisions. One seeks approval on project-related decisions from section and project leaders alone (Japanese Executive

It would go on for some time. But when they finished, they had finished. They would not revisit it. Whereas our style tended to be more of 'let us have a quick discussion. Yes, we have come to a conclusion, we will do that'. Three or four days later, someone will say 'did you think of this?' And it would be a case of 'no, we did not. We better revisit the decision'.
(ibid.)

Honda's effective implementation of project-based work (even in design, which was considered by Rover as individualistic work) was seen as yielding a product that was "perfect in all sense of quality, cost-timing and finish of the car", because one spent time focusing on what the product would be like early on in the process (Chief Designer at Rover, 14 May 1999).

A project-based work style could be more easily adopted in a context where small batches of cars were produced. Honda could mature its product very quickly from one batch to another as it produced in batches of four. On the other hand, Rover produced 30-40 cars in the build phase.

Honda extended its internal teamwork to its external relations by forging close working relations with its suppliers. "Honda would work in partnership with all their suppliers. It was 'Japan PLC' versus the world and they were working together as a united team, whereas we were not" (Team Leader J at Rover, 27 May 1999). Honda's team orientation also had an implication on its cross-functional communication. Consequences of actions taken in one department on the activities of other departments would be taken into

VP of Honda R&D Europe, 29 March 2000). The *ringi* system is applicable more to investment decisions (e.g. Japanese project member on the XX, Honda Motor Co. Ltd., 3 April 2000).

account. For example, “when minor problems in production emerged, such as that in parts number, Honda specification control team considered the impact of the counter-measure on both its own work as well as that of the assembly welding section” (Japanese project member on the XX at Honda Motor Co. Ltd., 3 April 2000). Other departments were consulted upon a change, for example, in a part number before a drawing was issued. This working style was claimed to be ingrained in the Honda culture, rather than written in procedures. In contrast, “Rover issue specification immediately. When Rover specification comes suddenly, assembly people are taken by surprise. They cannot understand the information or the contents of the change immediately” (ibid.).

Although considerable willingness to co-operate with the Japanese was not apparent at the outset, frequent and intense interaction over time, and Honda’s engineering-oriented approach to building cars enhanced Rover’s willingness to learn from its partner. In addition, there was respect for Honda’s knowledge (Principal Mechanical Engineer L at Rover, 22 June 1999). In general, Rover held Honda with high esteem at meetings, as its quality was regarded as far better than that of Rover (Principal Electrical Engineer I at Rover, 24 May 1999), and its processes were seen as the most efficient and the quickest in design and development (Team Leader J at Rover, 27 May 1999). The senior management team strongly supported the adoption of Honda practices at the time of the Rover 200/Honda Concerto project. “As the project went on, we were more and more subtly encouraged to go the Honda way on everything. In essence, we adopted our specifications to meet theirs at the end of the day” (British Principal Electrical Engineer I, 21 June 1999). Honda practices, such as the Gebba-Kai process (i.e. quality circles

adopted by engineers to solve problems at the end of each build phase), close supplier relations and formalised build phases, were implemented where there was a perceived benefit in doing so.

The Gebba-Kai process basically represented a day set out in a project after a build sequence to iron out any problems related to a part not fitting on to the vehicle, or misunderstandings that existed between engineering and manufacturing. Suppliers and Honda engineers were also invited to these meetings. This practice involved Rover members in decision-making and improved communication across sections (Electrical Group Leader E at Rover, 7 May 1999). However, the implementation of Gebba-Kais at Rover differed from the way they were put to practice at Honda. Although one was to have an internal and an external Gebba-Kai that lasted for two days, as at Honda, Rover had “changed it a little bit for the worst” (British Senior Manager in Manufacturing Integration, 25 August 1999) with fewer number of days spent on and less number of people attending problem resolution sessions. Hence, there was an appropriation of work systems where Honda members were not directly involved in the implementation of the less codifiable practices. This was seen as the influence of the people who had not been over to Japan and seen how the process worked. “The aim is to always arrive at a decision. I think if we followed it [the Gebba-Kai process] *literally* and the way some of the Honda engineers worked, then yes, we would always arrive at a decision because they would not leave without a decision” (Design and Development Engineer at Rover, 23 June 1999).

One of the major lessons that Rover learnt from Honda was the use of suppliers as guest engineers.

Traditionally, the engineers would do a design, a drawing, send it to Purchase. Purchase would send it to supplier. The supplier would think about it, say no and send the answer back to Purchase. Purchase would send the answer to us. It is a very long process of designing something. It seems absolutely common sense with hindsight but the Japanese had offices and parts of offices partitioned off for suppliers to come and join them in the working environment.

(Team Leader J at Rover, 27 May 1999)

Having supplier engineers on site (i.e. implementing concurrent engineering) meant that meetings could be held quickly and drawings could be produced in a single format with instant feedback from suppliers. This practice was adopted to the extent that ‘guest engineers’ could be seen as equal members of the Rover team (British Principal Systems Engineer on Rover 800, G, 10 May 1999). Initially, there was the fear that “we cannot have the suppliers in our office. They will find out too many secrets” (Team Leader J at Rover, 27 May 1999). Honda helped knock those barriers down and made it much more of an open relationship or partnership with the suppliers.

Rover’s build phases were formalised to match Honda’s evolutionary process in car development. “Learning from Honda was that you must go through a process of evolution and all the components that fit into the vehicle must be off-tool and off-process. One of the requirements that Honda laid down was that the more you practised, the better the product” (British Principal Systems Engineer on Rover 800, G, 10 May 1999). However,

Honda saw Rover's adoption of the build phases as simply an adoption of labels.

It was more important to understand the reasons behind Honda engineers' actions than to concentrate on their actions alone. In other words, Rover had to understand the underlying philosophies of surface actions in order to successfully internalise Honda practices. The internalisation of Honda practices was approximated and never fully realised.

Emphasis on Training

The process of learning effectively at Rover was accomplished through company visits, boundary-spanning individuals, cross-functional teamwork and goodwill trust, formed through personal relations. This was far from being a transmissive form of teaching carried out in a condescending manner. Rather, Honda processes were validated and demonstrated to Rover engineers.

We had to have a Gebba-Kai because that was how they did their business. They forced us to use it but since they have left we have still used it. Imitation, being the sincerest form of flattery, we have continued to use the process...they did not try to teach it to you in a condescending manner though. In my experience, they did it, you asked why they did something and they shrugged their shoulders and said 'well, we always do it like that. It is the Honda process. So they did blindly follow the Honda process but it was a good process. So they did not come over and banged the table and said you must do it like that because we know best.

(Team Leader J at Rover, 27 May 1999)

Knowledge within this framework was shared through “influencing, copying each other” (Japanese Manager at Rover Liaison Office of Honda Motor Europe, 29 April 1999). Knowledge sharing occurred in a context of team building, which led not only to surfacing of innovative ideas but also allowed one to learn on the job (Principal Electrical Engineer B at Rover, 9 April 1999).

Honda’s emphasis on OJT (Principal Electrical Engineer B at Rover, 9 April 1999) created a high engineering skills base or specialist knowledge, which the company could effectively tap on. This contradicted Rover’s, or perceived UK’s emphasis, on certification. “We are training for the sake of training...for obtaining certificates that will improve our chances of progress in career. The Japanese provide training that is more oriented towards the job” (British Senior Purchasing Manager of Rover Group Projects, 16 February 1999). Wherever a Honda engineer was seen as too specialised to answer a particular product-related question, the matter, given the strong internal links, could be directed to other experts in the company (Principal Electrical Engineer C at Rover, 13 April 1999). In contrast, it was claimed that Rover had a low skills base that was compensated for through reliance on bureaucracy.

We have far more mediocre to good guys. Because we had higher proportion of mediocrity, we had to put systems in place to compensate for that, some degree of bureaucracy, reviews, paperwork systems, to help bring the whole thing together.

(Principal Electrical Engineer C at Rover, 13 April 1999)

Honda’s methodical steps in delivering components contrasted with Rover’s indulgence

in carrying out tasks in different ways across engineers. Each Honda engineer knew what he was supposed to do, and how to get from point A to B. Processes had been tested before, hence there were clear reasons as to why they abided by them.⁸⁹ However, Rover engineers applied processes as they saw fit. “I think we tend to look for compromise and modify as appropriate or we feel we have to because we have money constraints” (British Principal Systems Engineer on Rover 800, G, 10 May 1999).

Given Honda’s custom of limited documentation, it was difficult to transfer exact standards to Rover. “Standard [represents] old technology, hence we do not concentrate on documentation.”⁹⁰ In the context of transfer, it is bad, but internally, there is no problem due to the emphasis on face-to-face communication” (Japanese Project Manager at Honda, 5 April 2000). On the other hand, Rover was always seen as providing and sticking to documents. For example, they were said to have vehicle test specifications in every area with an “out-of-date content” (ibid.).

In the case of the shop floor, there was ‘watering down’ of diffused Honda practices where there was poor training. For instance, the Manufacturing Integration Manager at Rover (25 August 1999) explains that the first shift that worked in the methods-build on the R8 was trained very well. There was time to build relationships with people. However, in the second and the third shifts, the impetus was lost, because “they were off the job on Metro and on this job within a matter of days almost. They [operators] were

⁸⁹ Honda’s previous experimentation had led to a book of standards. “We have past history record like 20 years’ experience in the form of checklists. We review our previous bad experience” (Japanese project member on the XX, 3 April 2000).

⁹⁰ Honda’s practice of not documenting processes is seen as a typical feature of Japanese companies

not embedded in the culture as they should have been. Instead of adopting everything in the purest sense, I think it got watered down”. It was felt that the hasty implementation of processes ‘diluted’ the whole business ethic.

5.4.2.3 Control Mechanism: Degree of Involvement by the Japanese

Rover regarded the R8/YY project as constituting a 50-50 collaboration, where it had as much input into the collaboration as Honda. In other respects, it had been more a case of Honda leading Rover, and “actually dictating to Rover ‘this is what you are going to get, this is what you are going to do’” (Chief Designer at Rover, 14 May 1999).⁹¹ Overall, Honda was dominant to a large degree. It would provide the engineering design and expertise. The working relationship also included on-site support maintenance by Honda. “Honda was keen on laying out its philosophy” (Logistics Operations Manager at Rover, 23 April 1999). There was constant negotiation for acceptance by Rover. Honda seemed to believe that “combination of cultures does not work [in the development of a new car]” (Japanese Project Manager at Honda, 5 April 2000). This indicates that knowledge was not diffused to Rover in a linear fashion free from power struggles, and social inclusion and exclusion.

The exercise of power by Honda⁹² was influenced by differences in goals and the relative business situations or financial circumstances of the companies at the time. Given the

(Japanese Project Leader at Honda, 13 April 2000).

⁹¹ From Honda’s perspective, the project was based more on 70:30 collaboration with Honda taking the leading role. “The project before the Rover 200 project was a combination. It did not work. YY used Honda development way, whilst manufacturing used the Rover way. It was more successful” (Japanese Project Manager at Honda, 5 April 2000).

⁹² It is important to note that “Honda exerted influence but did not have authority” (British Ex-Director of Honda Collaboration at Rover, 21 January 1999).

nature of the relationship (technical collaboration rather than a subsidiary relationship), partners could not fully engage in free flow of information and knowledge sharing. They were competing in the same market. Moreover, Honda perceived Rover as possessing low engineering skills and lacking professionalism.⁹³

If Honda sees it [a given problem raised by the after-sale division] as urgent, then it will assign an engineer to work on it. A counter-measure will be taken. We address the problem and not the emotions like Rover does. Rover will say it is not serious enough....They will either ignore or give a nice speech appealing to emotions such as 'we are sorry we cannot do something'. (Japanese Manager at Rover Liaison Office of Honda Motor Europe, 29 April 1999)

Honda could not trust Rover suggestions in areas outside concept design, because "they thought they were the experts and did not feel that they should be told to try another alternative. You needed to prove to them that the alternative would work. Mountains of results were needed" (British Senior Purchasing Manager of Rover Group Projects, 16 February 1999). Honda's manufacturing people were not confident of Rover's ability, especially in areas of quality and supply control management. According to the Japanese Project Leader at Honda (13 April 2000), Rover engineers were talented but not well organised. "Honda engineers work on a new car as they launch another [whereas] Rover engineers' responsibility extends over to manufacturing" (ibid.).

⁹³ The perception of low engineering skills also includes lack of intuition or insight on Rover's part (Japanese Project Manager at Honda, 5 April 2000).

Approach to Discipline

Honda members were perceived by Rover members as following instructions to the letter. “It is a culture whereby they will respect their superiors. Once they are told that they must not take us through the secret area, then they will not. The Japanese always comply with their orders. We will comply if the orders suit us” (British Principal Systems Engineer on Rover 800, G, 10 May 1999). It was perceived that in the UK context, an employee would try and find another way of carrying out a task, rather than working to a process. This made it difficult to work in a regimented manner and abide by an agreed structure at Rover. According to a British senior manager in Manufacturing Integration (25 August 1999), Rover lacked the mechanism of self-control, that is the ability to prove a process, train people and introduce double checks to stabilise a process. For example, this was observed in the way Rover raised Project Change Requests (PCRs).

Again we might not have the discipline that they adopt in terms of the PCR changes. PCRs are supposed to be all resolved and signed off at the event. But not everybody turns up. Sometimes it is quite difficult to judge whether you should invite all your suppliers, because some of our suppliers come a long way. So we might not have the discipline to fully do it but we still basically adopt it.

(Principal Electrical Engineer I at Rover, 24 May 1999)

The regimented working style of Honda engineers⁹⁴ encouraged Rover engineers to approach vehicle development phases in a methodical manner. The formalisation of

⁹⁴ This was based on Honda’s history of stable engineering base. “Most of its engineers had not flicked from one component to another, or from one discipline to another, so if you spoke to a switch engineer, the guy probably had been doing switches for a good number of years. Whereas, within Rover, there was a culture that suggested we want people to do what they enjoy doing. And so you had a lot of hopping about.

development phases initiated the use of Gebba-Kais, which stayed on long after the Rover 200/Honda Concerto project. However, they were not running as effectively thereafter as they used to with Honda's involvement in 1985 (Principal Electrical Engineer K at Rover, 2 June 1999). Hence, the effective implementation of a control-related practice, discipline, was more difficult in the absence of Japanese involvement.

Honda engineers were regarded as displaying high levels of attention to detail. This provided them with the opportunity to explore every possibility in carrying out a task. This was an important feature of the engineering work carried out by both parties. Honda would be quick to come up with a counter-measure, and at times quicker than Rover, during the validation stage. Its specifications were found to be simpler and more attuned to what one actually saw in the real world (Principal Electrical Engineer I at Rover, 24 May 1999).

Honda engineers could afford to be attentive to detail and focus on the engineering function, because they were stripped of their administrative role of paperwork and politics. They would have project management assistants who would create the drawings for them. On the other hand, Rover engineers were responsible for more than just the engineering function. "We did all the paperwork, ordering systems. We did more functions than they did. We have less time on the engineering, less time on the attention to detail. I think that is where the Japanese beat us" (Principal Electrical Engineer I at Rover, 24 May 1999). Honda's tight control and focus on limiting variation within

I guess Honda always had the consistency of people that followed a product through from start to end. They all had good level of experience" (British Design and Development Engineer, 23 June 1999).

processes minimised faults. Whereas, Rover had to be skilled at fault-finding. Although Rover had many standards—“some more stringent than those of Honda—their engineers, factory workers could not keep to that standard...sometimes they lacked know-how⁹⁵ to correct some of the detailed drawings or manufacturing testing. This could also have been due to a lack of supplier capability. Maybe they could not instruct the supplier” (Japanese Principal Engineer at Honda, HC, 29 March 2000). As the Japanese project member on the XX at Honda (3 April 2000) claims:

In Japan, suppliers are very hardworking. They have to meet the expected time and quality. Rover could not enforce that on its suppliers. If there is a problem, we will visit the supplier and check all process from start to end. Our people examine the process together with the supplier. We carry out a ‘five-why analysis’ and even suggest process improvements. Honda has close supplier relations.

At times Rover’s adaptability to new work methods was constrained by the company’s long tradition of following a particular means of operating. This is exemplified by the differences in design requirements of the two companies.

[Rover] has many connections in the engine. They installed engine ECU [Electronic Control Unit] under the bonnet. Engine harness was connected directly to the engine ECU. In Japan, we clamp that wire connection in

⁹⁵ The reason for the lack of know-how at Rover was presented as the recruitment process. “Some engineers have been working at Rover for many years. However, the top management system in the UK is based on qualifications without the need to become a principal engineer at first. Managers as university graduates come to Rover and become a Chief Engineer. They do not know the actual capability of the engineers, and they force them to carry out certain tasks.” (Japanese Principal Engineer at Honda, HA, 29 March 2000). It is felt that this results in knowledge discrepancy between the chief engineer and principal engineers at Rover. On the other hand, the seniority-based promotion system at Honda is claimed to ingrain

order to prevent small vibrations from negatively affecting the ECU. Rover design did not incorporate this. When I explained why we clamp, they [engineers based in Japan] understood. The English have lots of experience [long tradition] of working without this clamp, so they asked ‘why do we need it? It will increase cost’...At the end, we could not come to a compromise. (Japanese Principal Engineer HA at Honda, 29 March 2000)

High levels of commitment could only be observed where a joint project was formed and the British and Japanese engineers worked together in a context of direct influence of tacit elements of the work that was carried out. In other words, side-by-side work in a context of direct exposure to habits, skills and routines of the collaborator positively influenced the diffusion of alternative work systems.

Level of Trust and Communication between the Japanese and UK Staff

In general, Rover engineers felt that Honda was secretive. Information that could ‘easily be transferred and adopted’ was seen as jealously guarded given the competitive nature of the collaboration. Honda’s secrecy was not applicable to process-related information “because we [Rover] had to understand the process in order to operate” (British Engineer I, 21 May 1999).⁹⁶ In other words, the underlying principles of Japanese quality systems were more difficult to diffuse than the tangible features and tools of such systems. (Further discussion can be found in Chapter 6). With respect to design information on the R8/YY project, Rover felt that there was a delay in delivery of such information.

practical engineering skills in its engineers before they attain managerial positions.

⁹⁶ In other words, source company’s intention to diffuse process-related knowledge, which required interpretation or sense-making during internalisation, was stronger than that of technology-related knowledge.

I think they made sure that their design was done first, obviously, before they released the information for us to do ours. We had to wait for them to supply us with information before we could do some of our design work. We felt that sometimes they held back a bit too long before giving us that information, information like body in white panels because they were common.

(Principal Mechanical Engineer L at Rover, 22 June 1999)

From Honda's perspective, such 'secrecy' was justified for it was 'natural' to be secretive in the R&D field. Honda served the US and the Japanese markets in addition to that of Europe.⁹⁷

Honda members felt that the knowledge they diffused to Rover was not shared within the company.

We found out that know-how did not transfer to others, because Rover [member] kept knowledge to himself, and then quit and transferred to another company. On one occasion, we were surprised to see that a manager received good information from Honda, but intentionally did not inform the boss, who, in turn, made the wrong decision. Rover managers are more like politicians than managers. (Japanese Project Manager at Honda, 5 April 2000 and Project Leader at Honda, 13 April 2000).

At the level of Rover liaison engineers who had been seconded to Japan and developed relations with Honda engineers and seen their openness in informal settings, Honda's secrecy was justified as avoidance of public face. Honda engineers would not inform

⁹⁷ The European market for Honda was much smaller than the US market.

Rover engineers of their solution or idea until it was fixed. Hence, one's perception of Honda's secrecy would depend on how far Honda would be in resolving a problem when directed a question. A delay in response was possible due to the time-consuming process of reaching consensus in decision-making at Honda.

Rover's liaison officers or 'boundary-spanning' individuals facilitated information flow and helped forge good working relations with the Japanese. This aided in minimising the communication problem.

During the early stages of development, 20-30 engineers were based in Japan, at Wako R&D for six months. Afterwards, we moved to Tochigi. We had a joint special room for them. We discussed many things face to face. Based on the XX project, we realised that we had to have the joint team meetings.

(Japanese Principal Engineer at Honda HA, 29 March 2000)

Face-to-face meetings were seen as an important mechanism for sharing ideas. They provided Rover engineers with an opportunity to work closely with Honda engineers. "To see your name on a piece of paper then to actually meet them, you find a step improvement in terms of helpfulness and communication" (Principal Electrical Engineer F at Rover, 21 June 1999).

Similarly, Honda engineers were stationed in Rover's plant. "The Japanese would come for two weeks, then leave for six weeks, then come back for another four to six weeks over a period of three years [from 1986 to 1989]" (Senior Purchasing Manager of Rover Group Projects, 16 February 1999). There was a greater understanding of Honda's

‘cultural way of working’ as Rover moved towards a stronger relationship with Honda with the use of liaison members.

Trust was developed over the course of the collaboration,⁹⁸ and Honda was freer with information as confidence was built at a personal level. Social relations helped develop goodwill trust and lower the communication barrier. The language of senior managers was made difficult with differences in work philosophies and ‘strategic talk’, as well as cultural differences. For example, Honda managers had difficulty in reading the ‘English mind’. “Now, I am working with a Japanese company on a project. I know their mind in detail. Sometimes they say they agree, but that is not really the case. They say they understand but I can read their mind. We could not do that with the British” (Japanese Executive VP of Honda R&D Europe, 29 March 2000). In contrast, communication was less of a problem where there was a technical issue related to a product common to both companies (British Principal Systems Engineer on Rover 800, G, 10 May 1999). “In terms of technical, you can explain and people can understand a lot quicker than when you are trying to explain socially. You are more product-focused. If the product is the same, it is slightly easier to get the point across” (Principal Electrical Engineer F at Rover, 21 June 1999). This points to the relative ease with which explicit technical knowledge, as opposed to more tacit philosophies, could be diffused to the UK context. With the Japanese, the less informal the situation, the easier it was to communicate and get agreement (Principal Mechanical Engineer L at Rover, 22 June 1999).

⁹⁸ According to the British Principal Systems Engineer on Rover 800, G, (10 May 1999), “I think they were right in not trusting us, to be honest. If you think back and look at their product at the time and our product, they were not the same level of standard. Their quality, supplier control, whole approach to development build phases were well in advance of ours, and it is probably not until the early 90s that we really caught up

Rover's high dependence on Honda led Rover engineers to perceive low willingness on the part of the Japanese partner to learn from its British collaborator. This was not felt at the senior management level. For example, "we got into electronic diagnostics before Honda. We interrogated their equipment, brought it back to our understanding. They later copied us. The equipment was partly used for immobilisation of the car [against car theft], hence they saw it as advantageous to copy it" (British GM of Honda Collaboration, 15 April 1999). The most important learning opportunity for Honda seemed to be British styling (Principal Electrical Engineer H at Rover, 12 May 1999). Honda also learnt from Rover's experience in manufacturing large cars⁹⁹ and negotiations held with European suppliers.¹⁰⁰ However, in terms of general development in production, Honda had nothing to learn from Rover (British Purchasing Divisional Manager at Honda UK Manufacturing, 22 September 1999).

5.4.2.4 Technology Diffusion

In general, Honda was technologically more advanced than Rover. "We developed various types of cars. In case of Rover, its products were not exported as much. Its flexibility was low. Honda's facility was much better" (Japanese Executive VP of Honda R&D Europe, 29 March 2000). Honda was seen by Rover as an "interesting mixture of amazing craftsmanship and very high technology at the same time" (British Design

with them. Of course, by then, they had moved on no doubt".

⁹⁹ Honda dealers were claimed to have experience in selling only small cars, such as the Civic. "Honda entered the large car sector by developing the V6 engine in the project prior to the R8/YY. It was a fast entry thanks to Rover" (Japanese project member on the XX, 3 April 2000).

¹⁰⁰ "The relationship between a manufacturer and a supplier in the UK, and maybe in Europe, is different from that in Japan. The Japanese supplier is very obedient to the car manufacturer. The European supplier is very confident of its capability and is not reluctant to refuse car manufacturer's requirement. We had to prepare carefully [for meetings with the European suppliers]" (Japanese Project Leader at Honda, 13 April 2000).

Director, 22 June 1999).

Rover was using two-dimensional (2D) drawings at the time of the R8/YY project, whilst Honda was working with CATIA (a CAD software) for modelling. It was claimed that the difference in the software used did not affect the work that was carried out in the electrical department of Rover, “because in terms of design specifications, we always dealt with paper copiers” (Principal Electrical Engineer F at Rover, 21 June 1999, see Appendix IX for Honda Motor Corporation’s communication network).

The white scan board was commonly cited as an extremely effective tool in arriving at consensus-based decisions. At R8/YY meetings with Honda engineers, notes would be taken in Japanese and English on an electronic copy board, and hand-written copies would be distributed spontaneously to all the participants. The benefit of writing the issues on the board was that “anybody can say ‘no, you have written that down wrong. You have to change it’” (Principal Electrical Engineer H at Rover, 12 May 1999). All participants were made aware of the issues discussed and agreed upon at the meetings. The sharing of tacit knowledge required the close involvement and co-operation of the knowing subject.

You knew exactly what was put on there, and whom it was actioned against. I think before that we were in the same meeting, everybody took notes in the way it suited them. Everybody saw things differently. With notes on whiteboards, you knew then who was actioned to do what and when they were supposed to do it. We would all have pens in our hands and we would be sketching away...Our communication was through

sentences and paragraphs, and theirs was pictorial.

(Electrical Group Leader at Rover, 7 May 1999)

These boards were also used for documentation purposes or as a way of formalising agreements. It was questionable whether IT could replace 'people transfer', for Honda strongly emphasised teamwork, personal relations and trust.

If we asked a technical question such as 'is it possible that you could do this?' And the answer would come back 'very difficult, no' and that meant it was absolutely impossible...And making friends with them enabled contact and communication. And once you had communication you could then discuss things much better.

(Team Leader J at Rover, 27 May 1999)

Matters subject to negotiation required personal visits. "Emphasis on social processes is more important. Technology is there to transfer data but this is not knowledge. It is only a subset" (Chief Advanced Power Train Engineer, 2 April 2000).

There was also investment in Rover's assembly lines. For example, Honda tried to modify the welding line at Longbridge during the R8/YY project. They were not able to change it, as Rover's production line was very long. "Rover asked EG [Honda Engineering] to build the whole production line. Hence, Honda exported and installed unique equipment to build the R8/YY. Rover saw and reviewed the reconstruction plan" (Japanese project member on the XX at Honda Motor Co. Ltd., 4 April 2000). As the Rover 200/Honda Concerto project involved a high level of common componentry and was to be manufactured at Rover's Longbridge plant, it was to Honda's benefit to invest

in the UK manufacturing plant.

The diffusion of technology complemented the availability of a skilful blend of people and the diffusion of tacit and explicit processes, supporting relatively high internalisation of work systems by Rover engineers.

5.4.3 Group Characteristic: Attitude of Teams towards Continuous Improvement Schemes

The level of commitment to continuous improvement schemes differed between shop-floor operators and engineers who served liaison roles. There was resistance on the shop floor for fear of 'Japanising' or being asked to do more than what one was responsible for.¹⁰¹ Operators felt insulted to be asked to work in a 'non-traditional' manner to improve processes. They would resist by saying "I have been working on this for 10 years. I have always done it that way" (Project Engineer on Central Components at Rover, 21 July 1999).

There were some who would be awkward. They wanted to start at the back of the line, work very quickly down the line to take a break for a smoke etceteras early. Because they were working far ahead of others, they would block other operators' work. Since then a lot has improved.

(ibid.)

It was felt that new recruits could internalise new processes in manufacturing more easily than older workers.

¹⁰¹ This also applied to some of the engineers. "Their [Honda's] demarcations were greyer and the engineers would be more flexible in those terms even though they did more engineering than we did. So there was a bit of fear on our side that 'having Japanese workwear', even at a director level, you could be

Obviously they did not come from a BMC Austin work ethic where you got major cultural differences regarding the relationships between management and workers and so forth... In the Edwards' days we were very contentious. There was the 'them and us' situation rather than the team working approach which is very strong in Honda. (Senior Manager in Manufacturing Integration at Rover, 25 August 1999)

It took many years to obliterate strikes and shift management-operator relations from "I am the boss. I am right. This is the way it will be done' to 'I am the leader of the group. Everybody has a say, but I will still be able to make a decision at the end'" (ibid.).

In spite of resistance, there was a positive shift in shop floor culture and an improvement in processes. Uniforms were introduced to reduce the segregation between engineers and operators. People became comparatively more disciplined and committed to teamwork. According to the Japanese Rover Liaison Office Manager at Honda Motor Europe (29 April 1999), Rover learnt to become more agile and flexible, and adopted cross-functional communication style during the R8/YY development.

In contrast to shop-floor workers, Rover engineers, who were assigned liaison roles to aid in information flow between Rover and Honda, responded more positively to Honda practices. The secondment of Rover engineers to Japan for six-12 months, and joint engineering team meetings either in the UK or Japan had a significant role to play in the internalisation of Honda's continuous improvement techniques and philosophies as applicable to engineering. It helped overcome cultural barriers and minimised

asked to do more menial tasks" (Principal Electrical Engineer I at Rover, 24 May 1999).

communication problems. It was beneficial to have people serving as an interface to “get the relationship going rather than talking to a stranger that may not speak English. It is a question of trust and communication and that always works with engineering” (Principal Electrical Engineer H at Rover, 24 May 1999). Engineers saw it as essential to build social relations based on trust, for “you could have a discussion and there would be lots of nodding and agreeing, and it did not mean they agreed with what you were saying” (Principal Electrical Engineer H at Rover, 21 June 1999). The main concern was not whether information flowed back and forth, but whether the message could be conveyed correctly, and this depended on a working relationship with Honda (Design and Development Engineer at Rover, 23 June 1999). Rover engineers quickly discovered that they could not start business immediately upon their visit to Honda in Japan. “The thing you soon learnt then was if you wanted to get information, you had to build a relationship with your opposite number. You got to be out drinking with them, then, after that, it starts to hold business” (Principal Electrical Engineer A at Rover, 24 February 1999). Although Honda displayed low formal trust, due in part to the perceived low engineering skills and quality processes at Rover, it was freer with information as confidence was built at a personal level.

As you got to know more and more of their engineers, and they got to know us, we would be designing things in the pub afterwards with Honda engineers. We would draw a design on beer mat, pass it over to a Honda engineer. He would improve it and give it back to me. That would spark another idea in him and then we shake on that. And then the next day, he would draw it up. We used to do a lot of our work like that.

(Principal Mechanical Engineer L at Rover, 22 June 1999)

Trust between Rover and Honda members could be built in two ways: socially, which involved the element of friendship (i.e. goodwill trust), and technically by demonstrating competence (i.e. competence trust) (Electrical Group Leader at Rover, 7 May 1999). The former form of trust could be built in an informal atmosphere where engineers could bring to surface what they knew but took for granted, whilst the latter could be built through involvement in decision-making. This is illustrated by the following anecdote.

That idea they [Honda] showed me, how to put things on composite drawings. I saw their drawing. They were free with that drawing. In fact, they trusted me so much they would leave that drawing to me to modify. The more you knew them, you either got on with them socially, or you could get on with them technically.

(Electrical Group Leader at Rover, 7 May 1999)

However, Rover liaison engineers had difficulty in eliciting concern over the R8/YY project among engineers based in the UK. As UK-resident engineers had not had the experience of working 'side-by-side' with the Japanese, they could not relate to the concerns of those based in Japan.

They obviously had other projects to work on. So I was saying no forget about the other projects and give me the answer in the R8 project now, please. I would plead with them, and bribe them and use different carrots and sticks....what you did find that as soon as an engineer had been to Japan and then back, it did not matter what project they were working on. Suppose 50 per cent of their work was on the R8 and 50 per cent on another project. Still if you went to them and said 'oh, we need to know the latest info on such and such for those in Japan', they would then do it.

That commitment was there once they had been immersed in it. They were committed for life really. (Team Leader J at Rover, 27 May 1999)

Although, on the whole, it was felt that there was a uni-directional diffusion of know-how from Honda to Rover, the sharing of knowledge among engineers in a social network was strong.¹⁰²

5.4.4 Overview

Table 5.5 provides an overview of the key characteristics that have an effect on the diffusion of Japanese work systems to an engineering project within the Rover-Honda collaboration. Initiatives taken by local and Japanese management to introduce alternative work systems at Rover are much stronger than those taken at Teniki UK. This is presented as ‘high degree of implementation’ in Table 5.5. The degree to which alternative work systems are infused with value and accepted by workers at Rover is higher than that at Teniki UK. However, there is room for improvement as is described in sections 5.4.2.2 and 5.4.2.3. Hence, this is presented as ‘medium degree of internalisation’ in Table 5.5. The local institutional context includes medium skills base in engineering, location in a deeply rooted manufacturing base, high inward investment and a high level of industrial dispute. The technical collaboration commenced in 1978 and the Rover 200/Honda Concerto (R8/YY) project was launched in 1985. Rover had reached a size of 37,675 employees by this year. It had a low level of financial dependence on Honda due to the nature of the relationship with the Japanese partner. The technical collaboration was aimed at joint design and engineering of automobiles. The

¹⁰² Unlike the senior managers at Rover, the engineers engaged in a “fairly open discussion. I mean it is

establishment of a liaison office in 1985 facilitated the imparting of Honda practices to Rover engineers. Rover experienced a shift to a project-based structure in 1985 with the initiation of the R8/YY project. The commitment to quality improvement schemes in car development was low until 1985. With the initiation of the R8/YY project, there was a step improvement in the level of commitment to such schemes. The dedication was even higher on subsequent projects, particularly upon the launch of the Rover 200 model in 1989. The approach to discipline was strong between 1985 and 1989, in which Rover engineers were seconded to Japan up to a period of one year. The 1985-1989 period also marked high levels of investment in quality and car development skills training. Engineers' learning process took place mainly through company visits and joint engineering team meetings. There was high and direct level of involvement by the Japanese partner in design responsibility. This was accompanied by a high communication barrier and low level of trust between the Japanese and UK staff until 1985. As personal relations were built over the course of the R8/YY project, the communication barrier was lowered and trust was enhanced. Rover, in comparison to its highly advanced partner company, was dominated by a medium level of technology diffusion, especially in factory lines.

between engineers when you get down to it. The physics is the same for both of us. We do not get involved in politics" (Principal Electrical Engineer C at Rover, 13 April 1999).

Table 5.5 Key Characteristics that have an Impact on the Implementation and Internalisation of Japanese Work Systems at the Rover-Honda Collaboration

	Key characteristics	Rover-Honda R8/YY project
<i>Local Institutional Level</i>	Location: Site	Traditional home of Britain's car manufacturing base
	Skills base	Medium in engineering skills
	Inward investment	High
	Level of industrial dispute	High
<i>Company characteristics</i>	Size	Large (37, 675 employees at the start of the R8/YY project in 1985, ~39,000 in 1999 and of similar size in terms of sales with Honda in 1978)
	Age (year of collaboration to the end of the project)	11 years (1978-1989)
	Nature of work	Automobile design, engineering, and manufacture
	Form of ownership	Technical collaboration, 20% mutual shareholding arrangement in 1990
	Number of Japanese expatriates and their roles in the UK	Regular visits by Honda engineers between 6 and 8 weeks (1986-1989), liaison office established in 1985 ¹⁰³ Advisory role
	Skills level of engineers/ Symmetry of expertise with that of the Japanese firm	Medium [as compared with that of Honda]
	Financial dependence on partner firm	Low ¹⁰⁴
<i>Organisational Level</i>	Nature of diffused practices - Organisational structure	Shift to team structure in 1985

¹⁰³ There is no reliable data on the size of this office.

¹⁰⁴ Rover was funded by the UK Government, and later by British Aerospace, hence there was a low dependence on Honda from a financial perspective. However, there was a high dependence on the Japanese partner from a technology and product development point of view.

	- Organisational culture: Commitment to continuous improvement schemes * Emphasis on training	High in quality skills and car development system
	- Control-related: Degree of involvement by the Japanese * Approach to discipline * Trust between the Japanese and UK staff * Communication barrier	High, Direct Strong till 1989/Mediocre thereafter Low till 1985/Medium till 1990/High High till 1985/Medium thereafter
	- Technological: Technology diffusion	Medium
<i>Group Level</i>	Attitude of teams towards the work systems of the source firm: level of commitment	Low till 1985/Medium till 1989/High thereafter
<i>Outcome</i>	Degree of - implementation - internalisation of Japanese work systems at the UK adopter firm	High Medium

Source: See text

5.5 Summary

The results of the case study show that the degree to which Japanese work systems are accepted at Teniki UK is influenced by the following characteristics: its

- i) location on a brownfield site in a centre for tourism,
- ii) employment of a low skilled workforce,
- iii) low level of commitment to continuous improvement schemes due to the low level of investment in training,
- iv) weak approach to discipline and
- v) indirect Japanese involvement in shop-floor activities.

There is also a high communication barrier, low trust between the Japanese and UK staff and low technology diffusion from the Japanese parent to the UK subsidiary. Overall, there is an indirect involvement of actors aiming to diffuse practices with limited resources.

The case study at Nissera UK reveals that the following characteristics:

- i) location on a greenfield site in a centre for manufacturing,
- ii) employment of a skilful workforce,
- iii) direct and high emphasis on training,
- iv) long-term financing with greater number of years spent in operation (than Teniki UK) and
- v) a strong approach to discipline,

are conducive to the acceptance of Japanese knowledge-driven work systems. There is also a greater willingness to diffuse technology where there is perceived competence, ability to develop a knowledge base and successful performance on the part of the UK subsidiary. There is a direct involvement of actors in the diffusion of systems where both tacit and explicit practices are emphasised, and sufficient resources are available to diffuse them.

The case study findings in the Rover-Honda collaboration site show that the degree of learning is highest where there is

- i) direct Japanese involvement in activities,
- ii) formation of goodwill trust within a context of personal relations,

- iii) company visits and secondment of liaison officers to Japan,
- iv) similarity in goals at strategic and engineering levels,
- v) emphasis on the diffusion of both tacit and explicit components of continuous improvement schemes (such as a project-based company structure and commitment to quality) and
- vi) an openness in communication.

Although there were institutional incompatibilities, especially limited discipline on Rover's part, and the exercise of power and low formal trust on the part of the Japanese partner, Rover members to a large degree accepted Honda's manufacturing system, certain engineering processes and managerial philosophies.

Japanese expatriates in the two subsidiary firms and UK and Japanese engineers in the technical collaboration site served as 'boundary-spanning' individuals. In other words, they were influential actors in the diffusion of the source companies' work systems to the UK adopter firms. The internal and external linkages of the boundary-spanning individuals were stronger in the case of the technical collaboration site.¹⁰⁵ A subsidiary relationship was not necessarily more conducive to stronger knowledge sharing and higher trust formation (even though one might expect less secrecy and more willingness to share information in a subsidiary relationship) than a technical collaboration. Negandhi and Welge (1984) demonstrate that Japanese expatriate managers play a key role in facilitating control, co-ordination, communication and management, and

¹⁰⁵ Engineers were able to "gather information from external areas and disseminate that information to their colleagues" (Tushman and Scanlan, 1981:303).

production technology diffusion from the parent company to the overseas operation. However, this is not necessarily the case at Teniki UK.

In sum, the descriptions made on the basis of the case studies at Teniki UK, Nissera UK, and the Rover-Honda collaboration reveal considerable differences in the degree to which Japanese knowledge-driven work systems are put to practice by management and accepted by employees in the UK automotive manufacture industry. In the following chapter, the degree to which work systems are put to practice (i.e. implemented) and accepted (i.e. internalised) will be compared and contrasted across the three cases and linked to the influence of nationally distinct social systems.

CHAPTER 6

COMPARISON AND DISCUSSION OF THE RESULTS FROM THE CASE STUDIES

This chapter comprises a comparison of the findings from the case studies on the degree of internalisation of knowledge-driven work systems diffused from Japan to the UK in the automotive manufacture industry. The contrasts and similarities identified are evaluated against the background of nationally distinct social settings. The resulting insights into the process of internalisation of work systems are related to the propositions formulated in Chapter 3. This yields empirically supported insights into the collective influence of a range of key institutional characteristics relating to the degree to which structural, cultural, control-related and technological practices are implemented and internalised.

6.1 Comparison of the Degree of Implementation and Internalisation of Japanese Work Systems in the UK Automotive Manufacture Industry

In the following section, the degree of implementation and internalisation of Japanese knowledge-driven work systems across three sites in the UK automotive manufacture industry is compared and contrasted at the local institutional, organisational and group levels. The key local institutional characteristics are analysed first, followed by a comparison of the findings at the organisational and group levels. Finally, institutional limits to the diffusion of work systems are addressed.

6.1.1 Comparison of Local Institutional Characteristics

The degree of implementation and internalisation of Japanese knowledge-driven work systems differs across the three companies investigated on the basis of the location area and site of the companies, as well as the associated skills base of the workforce in the given regions. The location of Teniki UK on a brownfield site in a centre for tourism and the associated low skills base in manufacturing contrast sharply with Nissera UK’s location on a greenfield site in a centre for manufacturing with high skills base in manufacturing. Teniki UK’s local institutional setting also contrasts with the Rover-Honda collaboration’s local institutional context. For example, Rover has a medium rather than a low skills base. This contrast is shown in Table 6.1, in which results of the document analysis on employment trends and levels of inward investment are presented.

Table 6.1 Key Local Institutional Characteristics that have an Impact on the Implementation and Internalisation of Japanese Work Systems at Teniki UK, Nissera UK and the Rover-Honda Collaboration

<i>The Local Institutional Level</i>	Teniki UK	Nissera UK	Rover-Honda R8/YY project
Location: Site	Brownfield (pre-existing culture)	Greenfield	Traditional home of Britain’s car manufacturing base
Area	Centre for tourism	Centre for manufacturing	(pre-existing culture)
Skills base	Low in manufacturing	High in manufacturing	Medium in engineering*
Inward investment	Low	High	High

* This is the perceived level in comparison to that of Honda.

Source: Tables 5.2, 5.4 and 5.5 in Chapter 5

Whitley (1999b:51) argues that the extent to which collective representations are based

on certified expertise rather than on industries or enterprises “has significant consequences for the internal organisation of work process and division of labour”, as demonstrated by demarcation disputes and professional specialisation in Britain. However, unlike the findings publicised in the Japanisation literature (e.g. Oliver and Wilkinson, 1992), the level of industrial dispute is not found to have a significant impact on the degree of internalisation of Japanese work systems in the current study. A low level of industrial dispute in the region in which Teniki UK is located does not necessarily facilitate the implementation and internalisation of work systems. Similarly, high levels of industrial dispute in the regions in which Nissera UK and Rover are located do not impede the internalisation of Japanese knowledge-driven work systems. On the contrary, the Teniki UK workforce displays resistance to alternative methods of work despite the low level of trade union strength in the area. This is due to the dominant effect of a pre-existing culture and its negative influence on the level of internalisation.

Inward investment, that is the government initiative for investment, is found to have an impact on the implementation and internalisation of alternative work systems. Inward investment is low in the centre for tourism in which Teniki UK is located, whilst it is high in Nissera UK and the Rover-Honda collaboration sites. Low inward investment seems to negatively influence the internalisation of Japanese work systems. There is less attempt by the UK government “to raise skill levels, encourage the adoption of quality management standards and even to strengthen trade associations” (Deakin *et al.*, 2000:60). According to Lane (1996:275), Britain’s limited role in industry has negative implications for aligning the social infrastructure with the needs of the industry,

“particularly in the fields of financial risk-sharing, research, education, and training”. The social isolation of enterprises (given the dispersion of individualism and aversion to dependency) has had consequences for investment and innovation behaviour. For example, small and medium-sized supplier firms tend to lack the social system that can provide expertise and skill. This can mean inadequate access to long-term finance due to the lack of government sharing and relations regulating competition and co-operation (ibid.).

In line with Sharpe’s (1998b) argument, this study shows that the absence of a pre-existing culture on the greenfield site of Nissera UK facilitates the internalisation of highly institutionalised Japanese practices as the new workforce has fewer preconceptions about the manufacturing process. A new set of work procedures can be introduced with less resistance. Nissera UK can also employ a skilful workforce due to its location in a centre for manufacturing. By contrast, in a brownfield site like Teniki UK organisational inertia leads to practices that more closely resemble local practices. There is a pull for ‘local isomorphism’ at the brownfield site of Teniki UK (Ferner and Quintanilla, 1998). In other words, there are normative constraints on alternative structures and processes for the Teniki UK workforce to consider. To some extent, such a limitation also applies to the Rover-Honda technical collaboration site as it is located in a traditional manufacturing base. Strong lines of demarcation at Rover have led to a defence of job territory and challenged the drive towards increased flexibility in the manufacturing area (c.f. Sharpe, 1997). However, the engineers, on which this study focused, showed less resistance to the implementation and internalisation of Japanese

knowledge-driven work systems due to the difference in the nature of their work, the skills base and learning from previous collaborative work with the Japanese partner, Honda.

Theoretically, high manufacturing skills in a given region can be expected to present a challenge to the implementation and internalisation of Japanese work systems, if this skills base is taken to reflect pre-existing routines. In practice, the case studies at Nissera UK and the Rover-Honda collaboration indicate that medium to high skills level in manufacturing/engineering is essential in directing resources towards the internalisation of Japanese knowledge-driven work systems. This would imply fewer resources invested in raising basic skills at the adopter companies.

In this study, it emerged that the degree of implementation and internalisation of Japanese knowledge-driven work systems tends to be high where there is a favourable local institutional context, characterised by a high inward investment and location on a greenfield site. This is exemplified by Nissera UK. As far as the cases are concerned, the absence of a pre-existing culture is more conducive to the implementation and internalisation of Japanese work systems than a non-unionised labour market. In other words, the impact of the location site on the internalisation of alternative work systems is stronger than the level of industrial dispute in a given region. In contrast to what is depicted in the literature (e.g. Elger and Smith, 1994), a large supply of unskilled workers and location in a centre for tourism (as exemplified by Teniki UK), where labour can be expected to be relatively free of preconceived ideas in manufacturing, do not appear to

facilitate the implementation and internalisation of Japanese work systems. Where there is a low inward investment and location on a brownfield site, as is the case with Teniki UK, the degree of implementation and internalisation of Japanese knowledge-driven work systems tends to be low. However, a high level of industrial dispute, location in a centre for manufacturing and a large supply of skilled workforce (as was claimed in Table 3.3 in Chapter 3) are not necessarily obstacles to the implementation and internalisation of diffused work systems, as is illustrated by the Rover-Honda case.

A closer comparative analysis of the characteristics that have an impact on the diffusion of Japanese knowledge-driven work systems is provided in the sections below. This analysis provides more detail on the contrasts between Teniki UK, Nissera UK and the Rover-Honda collaboration along the following characteristics: company age, size, and terms of financing; organisational characteristics such as the nature of diffused practices; group characteristic of team attitudes to alternative work systems and the extent of social networking.

6.1.2 Comparison of Organisational and Group Characteristics

The extent to which Japanese knowledge-driven work systems are adopted at Teniki UK, Nissera UK and Rover shows some similarities but, more strikingly, presents contrasts. Table 6.2 indicates that the degree of implementation and internalisation of Japanese work systems is the lowest at Teniki UK, despite the diffusion of similar processes to each local setting.

The organisational arrangements at Teniki UK seem more persistent, hence more resistant to change, than those at Nissera UK and the Rover-Honda collaboration. The three firms are created at different times under distinctive conditions and, hence, exhibit variation in the way in which Japanese work systems are transplanted (Powell, 1991).

Table 6.2 Key Organisational and Group Characteristics that have an Impact on the Implementation and Internalisation of Japanese Work Systems at Teniki UK, Nissera UK and the Rover-Honda Collaboration

Outcome	Degree of - implementation - internalisation of Japanese work systems at the UK adopter firms	Low Low (Teniki UK)	High Medium (Nissera UK)	High Medium (Rover- Honda R8/YY Project)
Company characte- ristics	Size (in 1999)	Medium (170 employees)	Medium (300 employees)	Large (37,675 employees at the start of the R8/YY project in 1985, ~39,000 in 1999 and of similar size in terms of sales with Honda in 1978)
	Age (year of acquisition/ establishment to data collection/completion of the project)	3 years (1996-1999)	11 years (1988-1999)	11 years (1978-1989)
	Nature of work	Assembly of carbon canister (37%), Air Intake Systems (35%)	Assembly of instrument clusters for automobiles (83%), motorcycles (13 %), construction machines (4%) (in 1999)	Automobile design, engineering, and manufacture
	Form of ownership	Subsidiary relationship, 57% of Teniki shares held by Japanese car manufacturer	Subsidiary relationship, Parent company is not owned by a car manufacturer	Technical collaboration, 20% mutual shareholding arrangement in 1990
	Number of Japanese expatriates and their roles in the UK	4 (MD is British) Advisory role	12 (including MD) Mainly director role	Regular visits by Honda engineers between 6 and 8 weeks (1986- 1989), liaison office established in 1985 Advisory role

	Skills level of the workforce/ Symmetry of expertise with the Japanese firm	Low	Medium	Medium [as compared with that of Honda]
	Financial dependence on parent/partner firm	Medium	Low-Medium	Low
Organisational Level	Nature of diffused practices - Organisational structure	Shift to team structure in 1999	Shift to team structure in 1997	Shift to team structure in 1985
	- Organisational culture: Commitment to continuous improvement schemes * Emphasis on training	Low	High (till 1997)/Medium thereafter	High in quality skills and car development system
	- Control-related: Degree of involvement by the Japanese * Approach to discipline	High, Indirect Weak	High, Direct Strong(till 1997)/Mediocre thereafter	High, Direct Strong till 1989/Mediocre thereafter
	* Trust between the Japanese and UK staff	Low	Low-Medium	Low till 1985/Medium till 1990/High
	* Communication barrier	High	High	High till 1985/Medium thereafter
	- Technological: Technology diffusion	Low	Low	Medium
Group Level	Attitude of teams towards the work systems of the source firm: level of commitment	Low	Medium	Low till 1985/Medium till 1989/High thereafter
	Extent of social networking	Low	Medium	High

Source: Tables 5.2, 5.4 and 5.5 and text in Chapter 5.¹⁰⁶

The impact that the differences in organisational and group settings can have on effective diffusion of work systems is detailed below.

¹⁰⁶ 'The extent of social networking' and the sub-themes under the 'nature of diffused work systems' became apparent during the analysis of the data.

6.1.2.1 Company Characteristics

The influential company characteristics (summarised in Table 6.2 and discussed in Chapter 5) are firm's size and age, nature of work, form of ownership, number of Japanese expatriates and their roles in the UK, skills level of the workforce and the financial dependence on the parent/partner firm. In section 6.1.2.2, the impact of the nature of work, the number of Japanese expatriates and their roles in the UK, as well as the skills level of the workforce, on the internalisation of work systems is discussed under organisational characteristics. This section presents the impact of company size, age and the form of ownership together with the financial dependence on the source company (labelled here as the terms of financing).

Company size

In line with the arguments supplied in the literature (e.g. Lincoln and Kalleberg, 1990), large organisations can offer greater financial stability and resources for the attainment of high levels of implementation and internalisation of Japanese work systems than small organisations. Low volumes and variety inhibit the diffusion of technology (Production Manager at Nissera, 13 April 2000). For example, the Rover-Honda collaboration's large size and the associated economies-of-scale in production, in comparison to that of Teniki UK, allow more resources to be allocated to the training of employees necessary for the internalisation of alternative work practices. In the initial years of its collaboration with Honda, Rover perceived itself as a small company in a huge market that was financially too weak to develop cars on its own. In the course of a series of joint projects with Honda, Rover's financial situation improved. Rover launched a structural and cultural

change programme in 1985 with the commencement of the R8/YY project, which marked a turning point for the company in financial terms.

Teniki UK's medium size (170 employees) and the associated high costs in production are putting pressure on the business and inhibiting the release of operators to training. Limited financial resources are also discouraging the company from cascading information on continuous improvement to operators. Hence, the degree of internalisation of work systems is low in this company.

Although Nissera UK, with 300 employees, is similar in size to Teniki UK, it displays a higher level of implementation and internalisation of work systems. This is found in part to be related to the age and availability of resources for hands-on management in the company.

Company age

The case studies show that the longer the affiliate firm is in operation, the more familiar employees become with the alternative work systems. The positive influence of the time factor is especially observed at Nissera UK and the Rover-Honda collaboration. The passage of time (11 years at Nissera UK and Rover-Honda collaboration sites from the year of foundation to the year in which data were collected or the project was completed) and the experience of a previous working relationship have encouraged emphasis on worker training and education, and learning. For example, the secondment of Rover engineers to Japan for six to 12 months, joint engineering team meetings and forging of social relations based on trust facilitated the implementation and internalisation of

Honda's continuous improvement techniques and philosophies at Rover. In contrast, Teniki UK having been acquired by the Japanese company in 1996, finds it difficult to replicate team spirit. The length of time that the team-based organisational structure has been in place is too brief. Time is needed to increase the skills level of the workforce. The company is currently investing its efforts into raising operators' NVQ levels, prior to achieving sustainable continuous improvement within the plant.

Terms of financing

The recent acquisition of Teniki UK by a Japanese MNC indicates that Teniki UK's financial dependence on its parent company is greater than that of Nissera UK on its parent or, indeed, that of Rover on its partner company. However, this does not lead to 'coercive isomorphism' (Westney, 1993) or an imposition of work systems by Teniki on its UK subsidiary. On the contrary, the transfer of expertise and financial resources from the Japanese parent is limited. In contrast to what is commonly cited in the literature (e.g. Sako and Sato, 1997; Iida, 1998 in Kubo and Saka, 2002; Morgan *et al.*, 2000a), Teniki UK receives short-term financing from the Japanese parent company. This is due to a 57 per cent shareholding arrangement between Teniki and a major Japanese car manufacturer. The implementation of Japanese work systems is inhibited through considerable financial pressure on Teniki UK in terms of demands for rapid profitability. The long-term view of the Japanese to development is more commonly observed at Nissera UK and the Rover-Honda collaboration. For example, Nissera UK does not bear the pressure for rapid profitability. A profit is not expected for the first three years of operation. It is observed that Nissera, at least till 1997, committed itself to a broad

ranging and long-lasting effort to create dedicated organisational capabilities at Nissera UK. At the Rover-Honda collaboration, the form of ownership being a technical partnership, the degree of financial dependence found in subsidiary relationships was not applicable. However, Rover was dependent on Honda in reducing the cost of developing and maintaining a complete product range that could boost its sales. The establishing of goodwill and competence trust, as well as the similarity in strategic and technical goals, led to a 20 per cent cross shareholding between Rover and Honda UK Manufacturing in 1990.

As far as the cases in this study are concerned, a long-term outlook on development as evidenced by the willingness of the Japanese parent/partner firms to expand the knowledge base of the UK affiliates (illustrated by Nissera UK and the Rover-Honda collaboration) is more facilitating in the degree to which Japanese work systems are implemented and internalised than a short-term perspective. A short-term orientation as evidenced by short-term financing and pressure for profitability at Teniki UK inhibits the development of a continuous improvement culture at the UK transplant.

It should be noted that the terms of financing are associated with the company characteristics of size and age. As companies grow in size and reach maturity, their financial dependence on the parent company (or dependence on the partnering firm for cost reduction in the case of the technical collaboration) seems to be lower. Furthermore, the cases indicate that the long-term orientation of the Japanese MNC to diffusing know-how tends to weaken as the UK affiliate fails to develop its own knowledge base and

satisfactory financial results. For example, Nissera UK faces limited diffusion of know-how as it has incurred huge losses, despite increasing sales, since 1993.

6.1.2.2 Organisational Characteristics

The present study asserts that the nature of the work systems diffused to the UK—whether structural, cultural, control-related and technological—has an effect on the degree to which these systems are implemented and internalised. To iterate a point made in Chapter 2, cultural and control-related systems are taken in this study as largely intangible, tacit systems or the software of the production system, whilst the structural and technological systems are seen as representing largely tangible, explicit systems or the hardware of the production system. The tacit foundations of continuous improvement schemes are seen as high in system embeddedness and, hence, are more difficult to diffuse to the UK setting. In line with this argument, the cases indicate that tacit cultural and control-related systems, unlike explicit structural and technological systems, are more difficult for the UK workforce to internalise. Under each type of work system, there are key issues that influence the internalisation of Japanese knowledge-driven work systems. These are discussed in the following section.

6.1.2.2.1 Organisational Structure: The Shift to Team Structure

There has been a shift in the organisational structure of Teniki UK, Nissera UK and Rover towards a flatter team structure. This has had an impact on worker response to alternative work systems. Although the operators at the two subsidiary firms are cynical with regard to the structural transition, those at Nissera UK have shown a more positive response to adopting a team-based structure than those at Teniki UK. Similarly, Rover

engineers working on the R8/YY project have relatively been successful in facilitating a transition to a project-based organisation.

Given the segregation between management and workers, the shift to a team structure at Teniki UK met a challenge. Breaking this relationship in the UK seems to be a challenge for the culture and for the individual history of the company. The company faces difficulty in instilling high levels of commitment among operators. At Nissera UK, the experience of a shift to a team structure in 1997, resulting from efficiency concerns in the factory,¹⁰⁷ was better received by the operators at Nissera UK. However, the fluid job descriptions at the Japanese parent company are not widely observed in the UK subsidiary and, hence, operators perceive team leaders as above the work group rather than as members of the team. As Iwata (1982:52, brackets added) notes, “unlike the American-style [or the UK-style] companies where the institutional structure is quite logically arranged on the basis of clearly defined individual tasks, work is allocated to sections and divisions in Japanese companies”. Teniki UK exemplifies the common practice for firms to mimic the explicit parts of work systems, such as the structural elements, and to fail to recognise the tacit elements, such as team spirit (or the intangible aspect of employee involvement where there is a shared notion of creating knowledge collectively), that are integral to the operation of the system (Cutcher-Gershenfeld *et al.*, 1998). As section 6.1.2.2.2 presents, Teniki UK has not been successful in generating a continuous improvement culture.

¹⁰⁷ There was also the build-up of skills imparted by the Japanese expatriates in the early years of the company's establishment.

At Rover, a team-based approach to solving problems at an engineering level fostered a “synergistic atmosphere because it [brought] together a multidisciplinary team focused on achieving a common goal within a deadline” (Loo, 1996:7).¹⁰⁸ From Rover’s perspective, common goals in completing the project, in addition to learning from the previous project, influenced co-operation and knowledge sharing on the R8/YY project. As Mair (1998a:411) argues, prior to the R8/YY project, “in the early years of collaboration for the Ballade-based Acclaim and first Rover 200 (1979-1984), no attempt was made to learn”. In line with Fletcher’s (1999:150) argument “effective internal communication, leadership and employee issues (such as team building and incentivisation) [were] three generic aspects of critical importance in the potential success” of the R8/YY project. The project-based approach adopted at Rover with the influence of Honda, was seen as beneficial in creating a team effort to delivering projects on time. Nevertheless, from Honda’s perspective, the implementation of such a structure at Rover could not be carried out effectively. The functional managers continued to have more control than project managers. The top-down and hands-off management limited the degree to which a team culture could complement a team structure. This, once again, relates to the difficulty in internalising tacit elements, such as team culture, of a distinct institutional setting, that of a highly co-ordinated business system. There is a dichotomy between the demands of a business system that is strongly embedded in a network of mutual obligations and commitment (as in Japan) and those of a business system that discourages co-operation and collaboration between business partners, including employers and employees (as in the UK).

¹⁰⁸ This finding is supported by Bertodo’s (1989 in Oliver and Wilkinson, 1992) conclusion that power of multifunctional teams was recognised, divisions between different functions were reduced and

Although all three firms found it difficult to develop and replicate an ‘esprit de corps’ of continuous improvement,¹⁰⁹ seen as essential for operational improvements (Liker *et al.*, 1999), Nissera UK and Rover have, in relative terms, been more successful in running team-based activities, such as quality circles.¹¹⁰ In addition to the length of time that the team structure has been in place, which is associated with the company characteristic of company age, Nissera UK employs a more skilled workforce and has long-term financing from the parent company. Unlike their counterparts at Teniki UK, Japanese managers at Nissera UK have offered hands-on training to older operators and have been heavily involved in shop-floor activities. In other words, Japanese expatriates at Nissera UK have attempted to carry over the institutional co-operation feature of their business system that encourages investment in skill development to the UK system (e.g. Orrù, 1997). ‘Self-quality control’ can be observed in practice among some of the older workers who were trained by the Japanese. In spite of what may be seen as adversarial industrial relations in the area in which Nissera UK is located, the human resource practices of Japanese expatriates in the early years of establishment resulted in a sense of shared commitment between workers and management.

6.1.2.2.2 Organisational Culture: Commitment to Quality Improvement Schemes

In line with suggestions in the literature, pre-existing sets of strategies, structures and technologies shape the pattern of change towards the ‘Japanese model’ (Fligstein, 1990; Dedoussis and Littler, 1994). In the case studies, actual activities do not conform to the

interdepartmental co-operation increased at Rover.

¹⁰⁹ Similarly, Oliver and Wilkinson’s (1992) work shows that creation of a community of interest is found to be the most difficult to establish in the UK.

prescriptions of practices implemented in Japan (Meyer and Rowan, 1977), and diffused work practices are renegotiated and adapted. The role of actors in shaping systems or interpreting alternative work systems is especially visible where there is lack of management initiative in emphasising training and in adopting a strong approach to discipline. For example, older workers at Teniki UK work according to their own rules and enjoy the freedom created by a weak control mechanism in the factory. They manipulate scrap rate figures to present management-expected results. “That is the way they want them. The Japanese themselves do not reflect their actual scrap rate” (Team Coach, 18 January 2000). Similarly, an operator claims that “Quality Assurance is called over when there is a supplier-related problem. If there is pressure to get the order out, then they will pass the item that I would normally scrap”. The role of actors in reblending existing work systems and aiming for adaptation can be observed especially in cases where the nature and degree of Japanese involvement is indirect and low.

The experience of developing interdependency, trust and shared knowledge is unique to a specific workplace, context and group of people (Cutcher-Gershenfeld *et al.*, 1998). Hence, Teniki UK, Nissera UK and Rover have had difficulty imparting a source company’s continuous improvement activities (such as discipline in the workplace and ‘5C housekeeping’ principles) by securing the commitment of all parties to the process. The ability of the team leaders in the two subsidiary firms and project leaders at Rover to maintain good communication within and across teams, and to motivate operators and engineers to engage in continuous improvement activities, appears to be, at least in part,

¹¹⁰ The research focus at Rover was on quality circles applied to problem resolution in engineering rather than shop floor activities.

influenced by institutional variation in worker commitment and flexibility between Japan and the UK. Unlike in Japan, a minimum involvement philosophy has been the tradition in the UK (Dore, 1973). Continuous improvement schemes are implemented, even though they are not fully internalised, at Nissera UK and Rover, whilst they have failed at Teniki UK. In other words, there have been attempts to extract parts of the continuous improvement system for transplantation in the UK subsidiary. For example, unlike the practice in Japan (e.g. Imai, 1997), the housekeeping programme at Teniki UK was launched before the shift to a team structure in 1999. The Japanese belief that “good housekeeping should provide an environment conducive to improved work habits, quality and care of facilities” (Schonberger, 1982:67) is not felt by the operators and those enforcing the system at Teniki UK. Hence, the diffusion of the original meaning of the source company’s practices is limited. As was discussed in Section 6.1.1, the low manufacturing skills level of the workforce at Teniki UK (due to its location in a centre for service rather than manufacturing) has a negative impact on the degree of internalisation of Teniki practices.

At Nissera UK, the implementation of continuous improvement schemes has not yet been institutionalised or internalised by operators because of the way local management administers Kaizen initiatives. In accordance with Ackroyd *et al.*’s (1988) view, initiatives mediated by the orientation of British management are less straightforward in their effects. It is questionable to what degree local management has understood the importance of tacit elements in QC efforts. The Japanese emphasis on tacit knowledge challenges the diffusibility of work systems from the Japanese business system to that of

the UK (see the discussion on micro-level embeddedness in Chapter 3). The UK affiliate firms seem to have a limited ability to generate the “organisational cultures, involving high levels of worker commitment and flexibility” (Warner, 1994:510) that underlie the technical and structural elements of continuous improvement schemes as a result of conflicting organisational legacies, as between Japan and the UK. Along Taylorist lines, there is rather a standardisation and simplification of jobs so that workers can be easily substituted in the UK. This points to the significance of the historical context in one’s investigation of the diffusion process.

In the initial years of the Rover-Honda collaboration, learning seemed to be more of a ‘fait accompli’ at Rover. The company dealt with *results* rather than *processes* that led to results (Cooper and Law, 1995). The underlying philosophies were learnt as more projects of a collaborative nature were carried out over time. The continuous improvement schemes were fully implemented but only partly internalised by Rover engineers. Regular visits to Honda, the establishment of a liaison office in 1985 and joint engineering team meetings with Honda engineers facilitated the internalisation process. Personal relations and the accompanying trust embedded in social networks (discussed more fully in Section 6.1.2.4) were an important means by which Rover acquired and shared tacit knowledge. Company visits and ‘boundary-spanning’ individuals encouraged socialisation whereby tacit knowledge could be acquired through experience (Tushman and Scanlan, 1981; Nonaka and Takeuchi, 1995). However, although ideas that were ‘promoted’ by ‘boundary-spanning’ individuals gave access to know-how about alternative practices, such involvement in social networking ran the risk of reinforcing

supplier image of best practice (c.f. Robertson *et al.*, 1996). One also needs to be aware of the implications of the representational roles of such individuals for the internal communication link. According to Tushman and Scanlan (1981:301), “they may not serve as an information linking mechanism for areas within the organisation”.

Emphasis on Training

Field studies show that training has a major role to play in the internalisation of work systems at UK adopter firms. The absence of direct Japanese involvement in the training of the workforce and limited financial and human resources, limit the internalisation of Japanese practices at Teniki UK. As George and Levie (1984) argue, limited emphasis on training and waning interest in the QCs for not delivering the expected quick savings are frequently cited as reasons for the failure of QCs in the UK. Whereas at Nissera UK, hands-on training of operators by the Japanese in the initial years of the company’s establishment taught them the skills of ‘an apprentice’ working with his or her ‘master’ and learning a ‘craft’, “not through language but through observation, imitation and practice” (Nonaka and Takeuchi, 1995:63). Such an emphasis on training promotes knowledge diffusion (Tsang, 1999), and is highly influential in the internalisation of work systems at Nissera UK. It can also be argued that this emphasis provides a forum for socialisation, which in combination with an emphasis on training, has a positive effect on the internalisation of work systems. However, bearing in mind the definition of the internalisation of work systems given in Chapter 2, it is predominantly the process of ‘learning by doing’, or action and practice, that helps employees understand basic continuous improvement techniques and philosophies (e.g. Nonaka *et al.*, 2001). For

example, at Teniki UK,

You have not been able to deliver the Kaizen and other activities because you have not done the fundamental training. Also the factory people around here—this is a farmland around here, so demographically it is not an engineering magnet. So we got people that have not worked in an automotive factory with all the pressures, all the technology and requirements of a Japanese company. Therefore, we need to bring the core competencies up to a level and the only way to do that is to train and educate. (British Operations Manager, 18 January 2000)

Although, at Nissera UK, Japanese management's training role has reduced over the years, the skills level of the company's workforce (which is relatively higher than that at Teniki UK) and the location of the company in a centre for manufacturing on a greenfield site contribute to a higher degree of implementation and internalisation of continuous improvement schemes than that at Teniki UK.

At Rover, habitual routines and pre-existing organisational setting were redesigned to integrate Honda practices, which were embedded in a particular web of pre-existing social relationships, through company visits, cross-functional teamwork and the interaction of boundary-spanning individuals. Some of the integration mechanisms involved staff dedicated with liaison roles to the development of the collaboration and joint meetings that allowed for co-ordination through lateral communication and negotiation rather than hierarchy. Furthermore, inter-personal, inter-firm networks were used, along with communication and joint decision-making mechanisms, for co-ordination and integration (Grandori and Soda, 1995).

Nevertheless, the interpretation and use of Honda practices required open-mindedness and understanding. It was difficult to break “method[s that were] embedded in individual expression” (Manufacturing Integration Manager, 25 August 1999). Doing so necessitated heavy involvement in training. There was a high level of training in quality skills and the car development system at Rover.¹¹¹ Direct involvement with the Japanese and emphasis on training by local management were two means of avoiding ‘watering down or dilution’ of Honda practices.

The emphasis on training is related to the local institutional factor of location site and the company characteristic of size. As Liker *et al.* (1999:24) argue, “greenfield sites afford the best chances for successful transfer of a whole set of home-country attributes” and brownfield sites pose problems due to the pre-existing routines. As the widespread concern to orchestrate worker co-operation at Teniki UK has met resistance, Japanese expatriates feel that the transition in organisational structure would have been easier if the company was set up from scratch.

As regards the company size, “large firms and plants are likely to provide higher wages, better benefits and services, more training and promotion opportunities, and other inducements which small organisations lack the resources to supply” (Lincoln and Kalleberg, 1990:220-221). For example, Nissera UK is financially more stable than Teniki UK (even though both companies are medium-sized), hence it can more easily

¹¹¹ There was a lack of formal training in familiarising employees with cultural differences between Japan and the UK before the early 1990s. Rover expatriates were dispatched to Japan with no or limited training, at best “with the assumption that knowledge of the business should compensate for the lack of cultural understanding” (Pucik, 1996:158).

allocate resources to training. It should also be noted that the method of executing (not only the amount of resources allocated to) training needs to be taken into account in the internalisation of alternative work systems.

6.1.2.2.3 Control Mechanism: Degree of Involvement by the Japanese

The internalisation of Japanese knowledge-driven work systems is also influenced by the control mechanism that complements the diffusion of structural and cultural practices. The degree of involvement of Japanese expatriate management in strategic and operational decisions (including supervision on the shop floor) influences the adopter firms' perception of a power exercise by the source company. The cases in question demonstrate that the nature of management intervention in the implementation of Japanese work systems is crucial in shaping the internalisation process. Such intervention points to the active process of internalisation involving actors' decisions to accept new ideas. Management's hands-on, direct versus hands-off, indirect means of meeting strategic and operational aims influences the degree of internalisation of work systems.

Although the extent to which Japanese expatriates are involved in the day-to-day running of the business and manpower planning differs across the three cases, the pressure exerted on the technical and strategic side of affairs is considerable in the two subsidiary firms. In the case of Teniki UK, there is high, indirect involvement¹¹² by Japanese management in the activities of the affiliate firm. There is also financial pressure in terms of Teniki demands for rapid profitability, despite the interest on the latter's part in developing skills at the UK operation. This arises from Teniki's lack of flexibility in

financial control over the UK division's activities due to the role of a major Japanese car manufacturer in Teniki's operations:

Teniki have pressure on them to put pressure on ourselves to make the returns faster than normal. In that case, we have had to have very stringent sort of budgetary control and cutting of budgets which would affect the long-term, that is the training budgets are not as good as they should be in my belief. (British Operations Manager at Teniki UK, 18 January 2000)

By the same token, the parent company of Nissera UK is also heavily involved in its subsidiary's decisions with regard to the provision of technology and finances for investment. Nissera has not exerted stringent budgetary control over the UK division (at least not for its first three years of operation) but, in general, there has been high and direct¹¹³ levels of control on the subsidiary since its establishment. Nissera has exercised 'personal/cultural' control through direct supervision and expatriate control (Harzing, 2000). According to Harzing, 'personal/cultural' control can be exercised (i) directly or explicitly through centralisation, direct supervision and expatriate control, or (ii) indirectly or implicitly through socialisation, informal communication and management training. For example, Edström and Lorange (1984) illustrate that the two of the four MNCs that followed a global strategy in their comparison had a higher level of expatriates in their subsidiaries than the two companies that followed a multidomestic strategy. They indicate that having local managers in global companies might lead to sub-optimal decisions. As the responsibility for design rests with the parent companies, the

¹¹² Japanese expatriates are not involved in shop-floor activities.

¹¹³ This excludes the period after 1997 where there was less involvement in shop-floor activities by Japanese expatriates.

two subsidiary firms operate more as assembly operations, dependent on imports of manufactured inputs from Japan (Elger and Smith, 1994). The heavy use of expatriates at Nissera UK serves as one of the ways to bring the firm 'into the fold', that is to establish an organisational culture that aligns with the parent company's values (Jaeger, 1983). Corporate acculturation in this sense is based on developing informal networks of communication (Martinez and Jarillo, 1989) whereby international ethos and practices of the parent firm can be observed (Ferner *et al.*, 1995).

In the case of Rover, local management's pressure to follow the 'Honda' way in design and development became apparent during the R8/YY project. Nevertheless, as Rover was not 100 per cent owned by Honda, Honda's exercise of control was not of the same nature (i.e. in the form of direct supervision) as that of the Japanese parent companies on the Teniki UK and Nissera UK. 'Personal/cultural' control was exercised more through socialised, informal communication and management training at Rover (Harzing, 2000). Although there had been high, direct involvement of Honda in joint development practices, the method of diffusing know-how from Honda to Rover had not been as smooth as that to Honda's subsidiary in the US. For instance, Rover engineers could be shown the assembly line or order of tasks for a given process, but they could not receive any information on measurements or dimensions.¹¹⁴

Approach to Discipline

The source firm's approach to discipline is found to affect employee perception of the

¹¹⁴ Honda felt that such information was too confidential to be disclosed to technical collaborators as it was developed over a period of 10 years, with reference to cases of failure and success.

control exercised by the source company. It is linked to the exercise of personal/cultural control, founded on social interaction (Harzing, 2000).

The approach to discipline displayed by the local and Japanese management on the shop floor of Teniki UK is weak. In comparison, the control mechanism on the shop floor of Nissera UK is strong. This was especially the case under the administration of the previous MD till 1997. As part of its Kaizen philosophy, Nissera UK's approach to discipline remains more forceful than that at Teniki UK. This is applicable in particular to housekeeping principles.

As for Rover, the approach to discipline has not been as overt as that at Nissera UK due mainly to the nature of the relationship (a collaboration rather than a subsidiary). A covert form of power exercise was observable within Honda assuming the upper hand in design responsibility over the course of the collaboration. Side-by-side work also served as an implicit means of control in ensuring Rover engineers' commitment to work and the attention to detail. The support of local management and the direct involvement of Honda engineers over the course of the R8/YY project were strong till the launch of the model in 1989. The basic underlying principle of discipline was not upheld at Rover. As Ho (1993:83) contends, "it appears that the main difficulty is the lack of willingness to stick to rules" in the adoption of continuous improvement schemes. High levels of commitment at Rover were observed only where engineers worked in a context of direct influence of habitual or tacit elements, such as in joint engineering teams. Consequently, learning at Honda rested more on the tools that could be easily diffused than on

philosophies, such as attention to detail and discipline, behind those tools. It was perceived as important to adopt a proximal rather than distal mode of thinking. Proximal thinking privileges continuity, forever approached, processural nature of diffused practices rather than “results and outcomes, the finished things or objects of thought of action” (Cooper and Law, 1995:239). Effective communication was important in integrating the thinking, methods and tools of quality movement into everyday work (e.g. Fletcher, 1999).

In sum, a low level of internalisation of Japanese knowledge-driven work systems is observed where there is a weak approach to discipline, as is seen in the subsidiary firms in this study. In the case of Rover, Honda techniques were carried out in line with the Japanese expectation of attentiveness to detail as long as there was a side-by-side work. As was discussed in Chapter 2, work discipline constitutes another tacit underlying philosophy of continuous improvement schemes. The focus on explicit knowledge and the limited interaction through actions of individuals to synthesise knowledge in the UK business system (Hedlund and Nonaka, 1993) is seen as inhibiting the extent to which the tacit elements of continuous improvement can be internalised in the given cases.

Level of Trust and Communication between the Japanese and UK Staff

The level of communication and trust between the source and adopter firm is also found to influence employee perception of the control exercised by the source company. It is defined here as the common belief among the members of the adopter firm that the source company:

(1) makes good-faith efforts to behave in accordance with any commitments, both explicit and implicit (2) is honest [and open] in whatever discussions precede such commitments, and (3) does not take excessive advantage of the recipient unit, even when the opportunity is available. (Kostova, 1999:318, brackets added)

A higher level of trust on the part of employees towards management with regard to the introduction of 'new' work systems was found to be conducive to the internalisation of these systems. The case studies indicate that perceived high level of trust between the Japanese and UK staff, as that found at Nissera UK and among the Rover liaison engineers, facilitates the internalisation of work systems at the adopter firms. This is most likely due to the reduction in uncertainty over the motives behind the implementation of the practice (Szulanski, 1996).

In the case of Rover, lack of trust and communication were alleviated by means of forging social relations over the course of the R8/YY project. 'People transfer' through company visits served as a medium for trust building and learning (e.g. Pucik, 1996). As Sullivan *et al.* (1981:805) argue, Japanese "do not commonly use formal detailed contracts stressing strict performance and enforcement in their domestic business relations". Rather, responding to unfolding probes in a spirit of honesty and trust is seen as crucial among the Japanese. Goodwill and competence trust (Sako, 1992) were established through an informal atmosphere or a non-contractual arrangement, where engineers could share tacit knowledge (Senker, 1995a). Furthermore, electronic white boards and pictorial representations were used to explicate what was difficult to verbalise (Zuboff, 1996:198).

Teniki UK and Nissera UK demonstrate that employment in the UK, unlike that in Japan, is not a “kinship rite inducting a new member into the enterprise family to share in the work to be done” (Gregory, 1982:38). It is, rather, a contractual affair involving the performance of a particular work or service. Trust-building and openness in communication that are built within a paternalistic social mechanism that fosters long-term employment relationships; HRM practices, such as emphasis on job rotation, standardised in-house training, internal promotion and fluid job description; and strong social networking (Kubo *et al.*, 2001), are not in practice in the given subsidiary firms. This supports Whitley’s (1999b) argument that authority relations among firms operating in compartmentalised business systems are more contractual than paternalistic.

Poor communication at Teniki UK creates the perception that the Japanese have nothing to learn from their subsidiary when, in fact, there is a high willingness on the part of the Japanese parent company to learn the European market preferences and developments. Similarly, Nissera members import European designs to reduce the cost of manufacturing electronic components through their UK operation. There is also a high willingness to learn European supplier relations and British styling at Honda. However, willingness to learn by the Japanese is not applicable to general development in production in all of the three companies.

The degree to which Japanese management is involved in the activities of adopter firms relates to the company characteristic of the number of Japanese expatriates and their roles in the UK adopter firms. For example, Teniki UK has the least number of Japanese

expatriates (four advisors) available for training and strategic and technical decision-making. These advisors are preoccupied with start-up projects. Although they are seen as advisors, they occupy powerful positions within the informal organisation. In contrast, Nissera has reduced its Japanese management composition over the course of its subsidiary's development. This reduction has meant delegation of responsibility and autonomy to local management with deterioration in the level of commitment on the shop floor.

6.1.2.2.4 Technology Diffusion

Teniki UK, Nissera UK and Rover, in comparison to their parent/partner companies, are not profound examples of advanced technology. While George and Levie (1984:26) argue that "the Japanese industry is not leagues 'ahead' of us in terms of use of robots and automated equipment", there is evidence from the cases to suggest that the Japanese parent/partner companies are more technologically advanced than their UK affiliate firms, at least in the automotive manufacture industry. In spite of the low diffusion of technology to the adopter firms, such as to Nissera UK, the degree of internalisation of work systems is relatively high due to an emphasis on structural and cultural shifts. This suggests that technology is secondary to the people problems of implementing Japanese work systems. It is also reflective of the Japanese emphasis on the 'soft' dimension of management (Pascale and Athos, 1996). In line with the user-oriented perspective in the innovation processes literature (discussed in Chapter 2), culture, commitment, motivation, involvement and trust emerge as more important than technology in the internalisation of continuous improvement schemes.

Teniki and Nissera's willingness to diffuse technology and know-how to their UK subsidiary firms is greater where there is perceived high level of competence, an ability to develop one's knowledge base¹¹⁵, and successful performance in terms of strong financial status on the part of the subsidiary firm. At Rover, this willingness is more evident where there is perceived learning from past mistakes, similarity in goals, formalisation of processes and the associated discipline in execution, and clear objectives and division of responsibility.

The Rover case clearly indicates that investment in IT could not act as a surrogate for people transfer, for Honda strongly emphasised teamwork, personal relations and trust. According to Dore (1997:25), "economic transactions in Japan are much more commonly embedded in face-to-face social relations". Interactions are embedded in associative cultures, where people tend to utilise associations among events that may not have much of a 'logical' basis. Communication is characterised by face-to-face contact, which takes place among individuals who share a large body of information based on both historical and contextual modes (Hall, 1976 in Kedia and Bhagat, 1988). Taggart (1998:59) argues that where knowledge is tacit and difficult to codify, making it difficult to organise and transfer to dispersed contexts, "person-to-person communication is extremely important". Using Sivula *et al.*'s (1997) model of knowledge management in alliances, one can summarise the successful outcome of the R8/YY project in terms of the Japanese partner's willingness to share its knowledge and Rover's willingness and capacity to

¹¹⁵ There is knowledge asymmetry between the Japanese parent and the UK subsidiary firms. (This asymmetry is greater in the case of Teniki UK, as the skills level of its workforce is low rather than medium). It is suggested that "if partners, engaged in knowledge sharing, differ too much in the maturity level of their knowledge [or knowledge symmetry], communication problems might arise, preventing them

absorb external knowledge (Cohen and Levinthal, 1990).

6.1.2.3 Group Characteristic: Attitude of Teams towards Continuous Improvement Schemes

The case study findings show that 'paternalist' group norms of firms embedded in highly co-ordinated business systems are not highly compatible with 'Taylorist' group norms of firms embedded in compartmentalised systems. There is variation in the institutional setting of the source and adopter firms. For example, the UK adopter firms in this study do not seem to have a cultural orientation towards learning, innovation and change. The distinctive patterns of work system characteristics of task control, workplace relations and employment practices and the level of commitment that these characteristics support differ between Japan and the UK. The nationally distinct characteristics of social institutions in the two countries challenge the diffusion of work systems (see discussion on macro-level embeddedness in Chapter 3). From the three companies investigated, Teniki UK displays the lowest level of commitment to alternative work systems. Its group norms reflect a British tendency to question authority, in contrast with the Japanese subtle hierarchy of 'harmony and family unity' (e.g. Lincoln, 1990). There is resistance, especially among older Teniki UK operators, because of their preference for traditional British manufacturing system. There is also variation in worker responses based on each team leader's style in executing his or her responsibilities.

At Nissera UK, the level of commitment to continuous improvement schemes is higher than that at Teniki UK. This is due especially to the stronger attention paid to the

to achieve productive collaboration" (Aken and Weggeman, 2000:145, brackets added).

implementation of such principles being stronger and greater availability of financial and human resources. Although company age also contributes to the higher level of commitment at Nissera UK, it is not the sole determinant. As the period from 1997 onwards shows, its local management has not been very successful in sustaining high levels of commitment. For one thing, local management could not sustain the training system of the Japanese expatriates. There is variation in worker responses across departments and cells within the assembly area. For example, a low target cell with long working relations and integrated on-the-job training by the Japanese displays a stronger sense of commitment to continuous improvement schemes than high target cells with short-term outlook on training.

Rover employees' response to continuous improvement schemes differed between factory workers and liaison engineers. This was not only related to the difference in the nature of the work carried out, for there was a higher level of commitment among the engineers who were based in Japan for six-12 months and were members of joint engineering teams in the UK and Japan. The level of commitment was higher during the R8/YY project than in the period prior to 1985¹¹⁶ when the relationship between the two companies was defined more as 'arm's length' than 'side-by-side'.

¹¹⁶ The level of commitment was further enhanced with the projects that followed the R8/YY due to the positive influence of the passage of time, familiarity with Honda's practices and expectation, and the greater involvement of Honda in design work. "The projects that followed (1989 Rover 200/400/Honda Concerto, 1992 Rover 600/Honda Accord (European version), 1995 Rover 400/Honda Civic (European version) were led by Honda" (Mair, 1998a:411).

6.1.2.4 The Extent of Social Networking

The focus in the existing literature on 'Japanisation' tends to be on the power and control exercised by the Japanese in the diffusion of work systems to overseas operations (e.g. Dickens and Savage, 1988; Danford, 1998). However, this study emphasises the importance of social networks and relations in the cross-national diffusion of knowledge-driven work systems. The emphasis is on members' active involvement in social networking rather than their perceptions of the importance of the role of social networks in the diffusion of work systems. For example, joint work at the Rover-Honda collaboration was about sharing understandings through the synthesis and interaction of team members rather than "about moving knowledge around from person to person so that each expands their range of knowledge" (Swan, 1999:10). The internalisation of knowledge-driven work systems is possible where there is investment in relationships, shared understandings and attitudes to diffusion of Japanese work systems within the UK adopter firms. The low emphasis on training, as that at Teniki UK, does not create the environment necessary for the diffusion of a shared understanding. Moreover, pre-existing organisational structure, norms and cultural values at Teniki UK create heterogeneity in the group that is to adopt alternative work systems. This, in turn, creates divergent interpretations of what needs to be done and how best to do it. There is a low extent of social networking due predominantly to limited financial and human resources, limited involvement of the Japanese in shop floor activities and the emphasis by local management on diffusing the tangible systems in continuous improvement schemes.

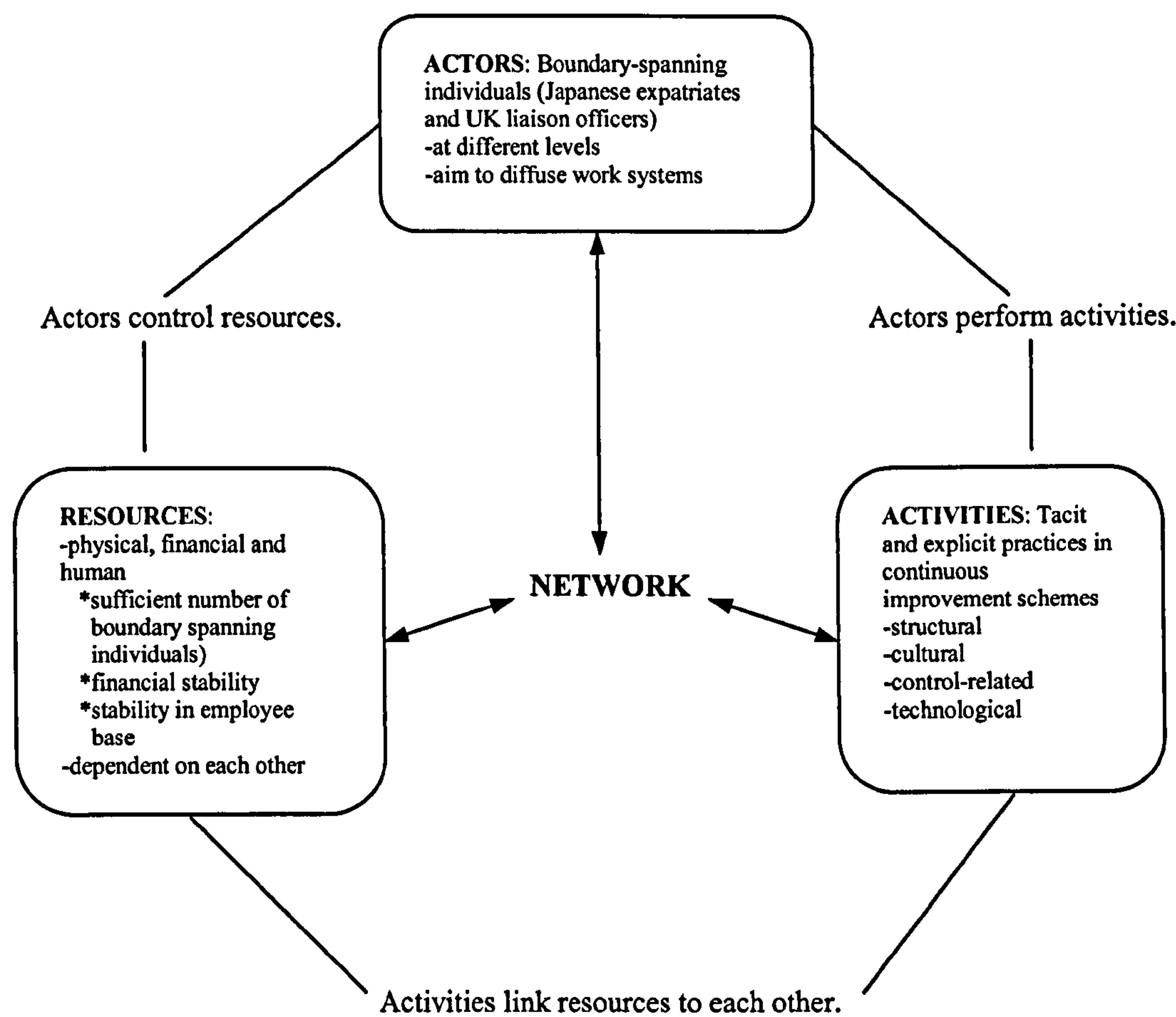
Fundamentally, the different values of the Japanese source firm and the UK adopter firm

in each case expose differences between individuals. According to Blackler (1995) and Swan (1999), such an exposition may lead to conflict, and the creation of new knowledge. The negotiation of work systems in this context occurs through interactive social networking rather than linear flow of information. The role of actors in facilitating the diffusion of knowledge also needs to be considered. In the cases concerned, Japanese expatriates serve as influential actors in the diffusion of the parent/partner companies' work systems to the UK affiliate firms. They serve to promote particular kinds of practices among members of the social system (Swan *et al.*, 1999). They act as a link to the source of information at the Japanese parent/partner firms, and are an effective medium for "acquiring and encoding timely, current, and soft information" (Tushman and Scanlan, 1981:290). For example, the direct involvement of the Japanese expatriate management in the shop floor activities of the greenfield site has had a positive impact on the internalisation of alternative work systems. At Nissera UK, there is higher level of involvement in social networking than at Teniki UK. The role of intermediaries or liaison officers is especially noticeable in the Rover-Honda collaboration. Rover liaison engineers helped to locate expertise at Honda, and forge good working relations with the Japanese. The high level of involvement in social networking helped minimise communication problems.

The degree of internalisation of Japanese work systems at the UK adopter firms depends on the type of activities or the nature of diffused practices, availability of physical, financial and human resources, and the level of interaction between the individuals involved, that is the role of the boundary-spanning individuals (see Figure 6.1). Actors,

resources and activities in this figure are linked by social networks that have an important role in the internalisation of practices (Newell and Clark, 1990).

Figure 6.1 Network Framework Conducive to High Internalisation of Work Systems



Source: See text; figure structure adapted from Håkansson (1986)

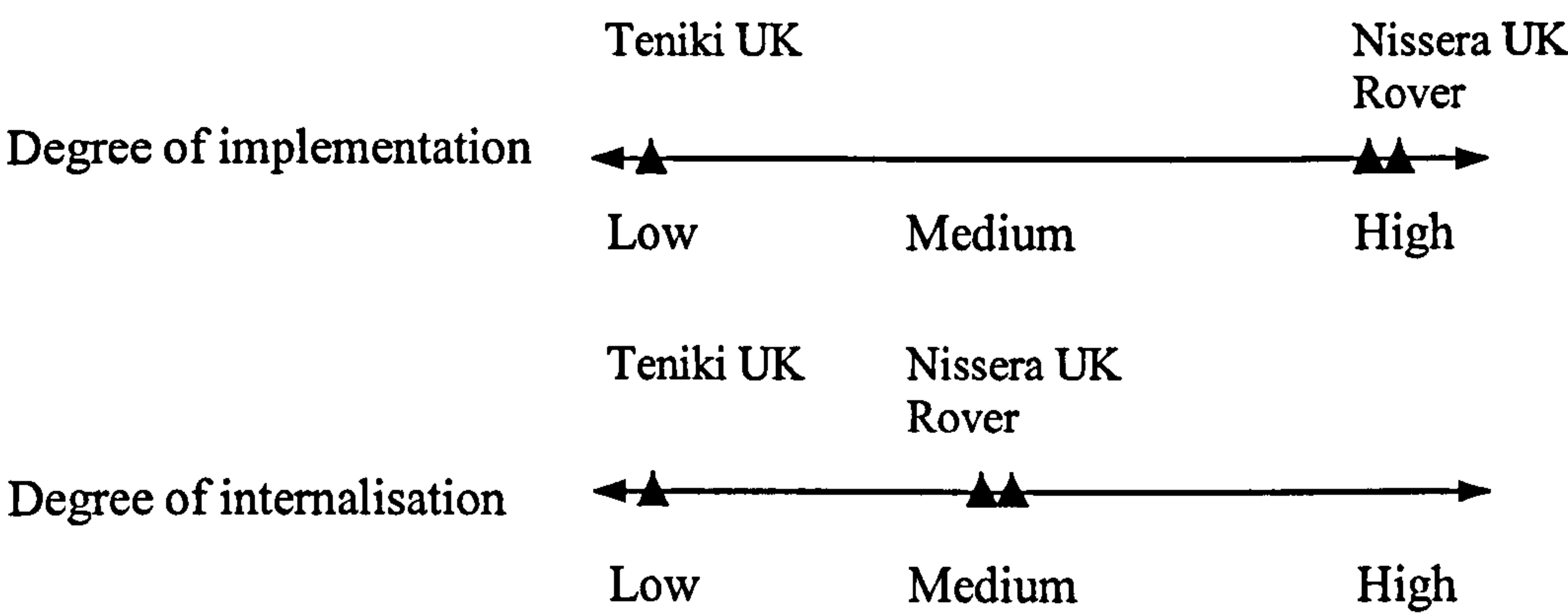
Figure 6.1 shows the interplay of actors, resources and activities within a network that is necessary to sustain the internalisation of Japanese work systems in the given cases. There is a greater likelihood of Japanese work systems to be internalised by the UK adopter firms where actors at different levels interact intensely to diffuse work systems, and heterogeneous—physical, financial and human—resources are available to support

structural, cultural, control-related and technological components of continuous improvement schemes. The network framework in this figure gives one the context in which to understand the decisions that managers have to take and the adopters' response to those decisions. It should be noted that, the focus here is more on networking relations and less on network structures that Håkansson (1986) highlights in his work. The findings in this study emphasise structure (i.e. the institutional context) as well as agency.

In conclusion, the three case companies exemplify the way work systems that are strongly institutionalised in character and acquired through engagement in specific action contexts can be 'sticky' (Szulanski, 1996) to diffuse to firms located in settings of weaker institutionalisation. There are selective attempts to draw upon practices identified with the 'Japanese model' (Taylor *et al.*, 1994). 'Compromise solutions' (Sharpe, 1997) seem to be common where only explicit structural and technical aspects of the 'Japanese model' are adopted (e.g. Delbridge, 1998). The tacit elements of continuous improvement schemes are difficult to internalise in the absence of a given set of local institutional, organisational, and group characteristics, as well as social networks that link resources, actors and activities together for the diffusion of knowledge. The different degrees to which Japanese work systems are internalised by the UK adopter firms tend to reflect the institutional variation between Japan and the UK (c.f. Whitley, 1999b). Teniki UK has relatively low degree of implementation and low level of internalisation of Japanese knowledge-driven work systems. By contrast, Nissera UK and the Rover-Honda collaboration display high degree of implementation and medium level of internalisation (see Figure 6.2 for a pictorial representation). The outcomes observed are due to the

availability of greater financial and human resources; direct and high involvement by Japanese management, encompassing direct approach to discipline and training; longer duration in operation; and higher skills levels or symmetry in expertise at Nissera UK and Rover.

Figure 6.2 The Degree of Implementation and Internalisation of Japanese Work Systems at Teniki UK, Nissera UK and the Rover-Honda Collaboration



Source: See text

6.2 The Institutional Limits to Diffusion of Work Systems

The process of work systems diffusion, as suggested by the literature (e.g. Morgan *et al.*, 2000a), does not only differ across countries. As the field studies show, substantial differences have surfaced in the comparison of the internalisation of Japanese work systems across the brownfield, greenfield and technical collaboration sites within the same sector. The internalisation of a continuous improvement culture and the complementary structural, control-related and technological practices appears stronger at Nissera UK and the Rover-Honda collaboration than at Teniki UK. For example,

knowledge diffusion methods, classified into three broad forms by Buckley and Carter (1999:90)—“personal communication (talking, meeting, e-mail etc.), codified communication (reports, drawings etc.) and embodied transfer (e.g. as product or equipment)”—had a major role to play in the internalisation of work systems at Rover. In addition, diffusion was embodied in practice whereby a new system was learnt-by-doing (Lave and Wenger, 1991). This was a means of diffusing the original meaning of the source company’s practices.

The cross-site differences in the degree to which Japanese knowledge-driven work systems are implemented and internalised can be explained by two levels of embeddedness discussed in Chapter 3.

6.2.1 Embeddedness at the National Level

At first glance, there is a shift towards a team structure in all the three sites. Nevertheless, some remarkable differences exist in the translation of these structures in the UK context. As was discussed in Chapter 3, the national business system differs significantly between Japan and the UK.¹¹⁷ The operational autonomy provided to individuals in small-group activities strengthened by a sense of groupism in large firms in the Japanese automotive industry is incompatible with the low worker discretion and a sense of individualism that has traditionally strengthened the management hierarchy in the UK automotive industry.¹¹⁸ The different set of cultures in Japan and the UK is seen as influencing a

¹¹⁷ For a more thorough understanding of the differences, please refer to the discussion on the structural and cultural legacies of organisations in the UK and Japan in Chapter 3.

¹¹⁸ It is acknowledged here that the UK automotive sector is undergoing transition mainly triggered by “continuing developments in the search for higher quality, a wider view of cost savings and new materials

particular degree of internalisation of Japanese knowledge-driven work systems at the brownfield, greenfield and technical collaboration sites in the UK. High levels of commitment to continuous improvement schemes are claimed to prevail in Japan, whilst such a commitment is found to be limited in the UK firms. This is exemplified by the brownfield site in this study. “In Japan, employees are grateful for being given a project to do. However, in the UK, there is demarcation, unionisation. Employees will ask ‘why ask me to do the project?’” (Personnel and Training Manager at Teniki UK, 15 February 1999). Overall, there is limited commitment to continuous improvement schemes in the given cases characterised by an enhanced management hierarchy and hands-off management. The differences in the particular set of structural and cultural legacies of Japan and the UK are seen as hindering the internalisation of Japanese work systems in the given UK adopter firms.

6.2.2 *Embeddedness at the Firm Level*

As was highlighted in Section 3.1.3 in Chapter 3, the emphasis placed on explicit and tacit knowledge varies between Japan and the UK. This variation tends to limit the diffusibility of work systems from Japan to the UK. The findings relating to Teniki UK, Nissera UK and the Rover-Honda R8/YY project highlight the cultural and structural barriers to the diffusion of Japanese knowledge-driven work systems. Firms face a second-level barrier in the diffusion of work systems, in the form of tacit work systems embeddedness at the organisational level. In line with Liker *et al.*'s (1999:23) argument,

and technologies” (GEAC, 1999). As the costs of managing the supply base become familiar to automotive manufacturers, quality systems become more harmonised. However, this does not mean a convergence in the means by which these systems are implemented.

“the tacitness of much of the knowledge that underpins the production system imparts a marked path-dependent and firm specific quality to the development of these systems”. For instance, the findings at Nissera UK point to the need to diffuse explicit knowledge, such as QC techniques, in conjunction with tacit knowledge, such as QC philosophies of team spirit and discipline. In the case of tacit knowledge, or philosophies underlying explicit knowledge, that cannot easily be articulated, such as one’s approach to discipline (as demonstrated by the Japanese partner in the technical collaboration site) and one’s method of training operators in the factory (at the two subsidiary firms), it is more difficult to implement and internalise knowledge in the manner in which it is put to use at the source company. For example, Honda’s engineering philosophy was more difficult to implement at Rover in the manner in which it was put to use at Honda. Honda was not secretive over its process-related information “because we [Rover members] had to understand the process in order to operate” (Electrical Team Leader D, 21 May 1999). Some of the engineers at Rover perceived the idiosyncratic-knowledge base (Grant, 1996) at Honda as the sense of discipline required to carry out continuous improvement schemes. To iterate a point made earlier, learning at Rover rested more on the tools that could easily be diffused from Honda than on the philosophies, such as attention to detail and discipline, behind those tools. By the same token, practices that could easily be codified or structured into a set of identifiable rules and procedures, such as the Gebba-Kai problem solving technique or Honda’s technology and engineering specifications, could be diffused relatively with ease to a different cultural setting.

There are opportunities for people to be involved in quality assessment and problem

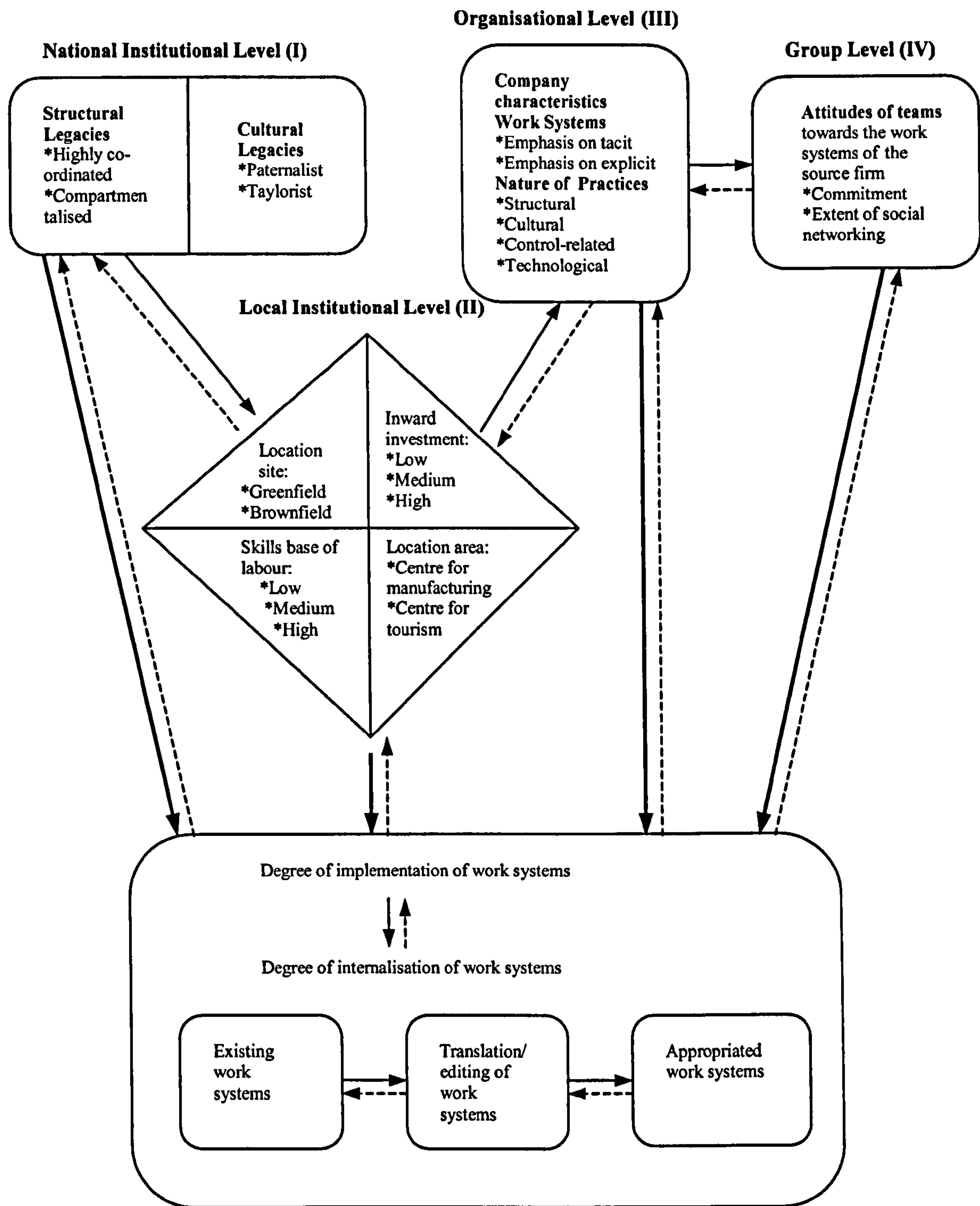
solving, especially at the greenfield and technical collaboration sites. However, the brownfield site is yet to cascade Kaizen-related training to the shop-floor level. Although the explicit elements of the Japanese system¹¹⁹ were implemented at Nissera UK and the Rover-Honda collaboration during the R8/YY project, the initiative and co-operation of the individual employee to maintain and improve day-to-day operations and to achieve continuous improvement in quality and efficiency could not be sustained in the absence of the Japanese. In all three cases, an introduction of a team-based structure did not fully elicit the tacit continuous improvement philosophy of team culture, which appears to be at least in part due to the variation in the degree to which tacit knowledge was shared with UK employees across the cases.

6.3 Teniki UK, Nissera UK and the Rover-Honda Collaboration Sites in their Institutional Contexts

In Section 2.3 in Chapter 2, an analytic framework had been constructed about the impact of key institutional, organisational and group characteristics on the degree of implementation and internalisation of Japanese knowledge-driven work systems. Figure 6.3 summarises the results of the match between the analytic framework and the empirical findings.

¹¹⁹ The explicit elements in the processes observed at Teniki UK, Nissera UK and the Rover-Honda collaboration include team-based organisational structure, JIT delivery, the quality circle and the associated

Figure 6.3 The Impact of Macro- and Micro-level Influences on Work Systems Diffusion



Source: See text

tools, such as SPC, 5C housekeeping system and the maintenance of tracking charts.

Figure 6.3 shows that at the national level, structural and cultural legacies of Japan and the UK can influence the degree to which Japanese knowledge-driven work systems are implemented and, ultimately, internalised by UK adopter firms. At the local institutional level, location site and area, inward investment and skills base of labour have an impact on the implementation and internalisation of work systems. The level of industrial dispute is not found to have a significant influence on the implementation and internalisation of work systems, hence is excluded from Figure 6.3. At the level of the firm, company characteristics, the nature of diffused work systems and the emphasis placed on explicit and tacit components of these systems influence the implementation and internalisation of work systems. At the group level, commitment displayed by teams towards the organisational practices of the source firm can hinder or facilitate the implementation and internalisation of knowledge-driven work systems.

The findings suggest that the interaction between the local institutional, organisational and group levels is a two-way process. There is a reciprocal interdependence rather than a one-way determinism. The solid arrows in between the four levels in Figure 6.3 point to the influence of each level on the one below it. For example, Rosenzweig and Nohria (1994:234) see “the extent to which [the company] is subject to pressure from local institutions such as unions and governmental bodies” as having an impact on human resource practices. This points to the impact of the local institutional level on the firm level. The broken arrows in the figure represent ‘trickling-up’ impact¹²⁰ of the local practices on higher levels such as the industrial relations system, the system of training

¹²⁰ The term ‘trickling-up’ is used to denote the assertion that the impact may not be observed immediately in the short run.

workers and managers, internal structure of corporate firms, structured relationships among firms in the same industry as well as their suppliers and customers, and idiosyncratic customs and traditions (Hollingsworth and Boyer, 1997). The local institutional level has an impact on the actions of the local actors through a set of institutional rules, and is, in turn, influenced by incremental changes in the rule systems of a subset of local actors. For instance, Teniki UK's efforts to raise the NVQ level of its workforce contribute to the enhancement of the skills base in the given regional area. Similarly, the internalisation of work systems can have an impact on the subsequent implementation of alternative work systems. "The users make significant and extensive contributions to the eventual shape and uses of an innovation" (Clark, 1987:169). The routinisation of knowledge-driven work systems can create a path-dependency that has an effect on the subsequent introduction of alternative work systems. This research focuses on single flows of influence from higher levels of analysis to lower levels. The reverse flows are not investigated. Future research is needed to investigate the impact of local practices on the local institutional and national levels, as well as the impact of internalised work systems on the implementation process (see Chapter 7).

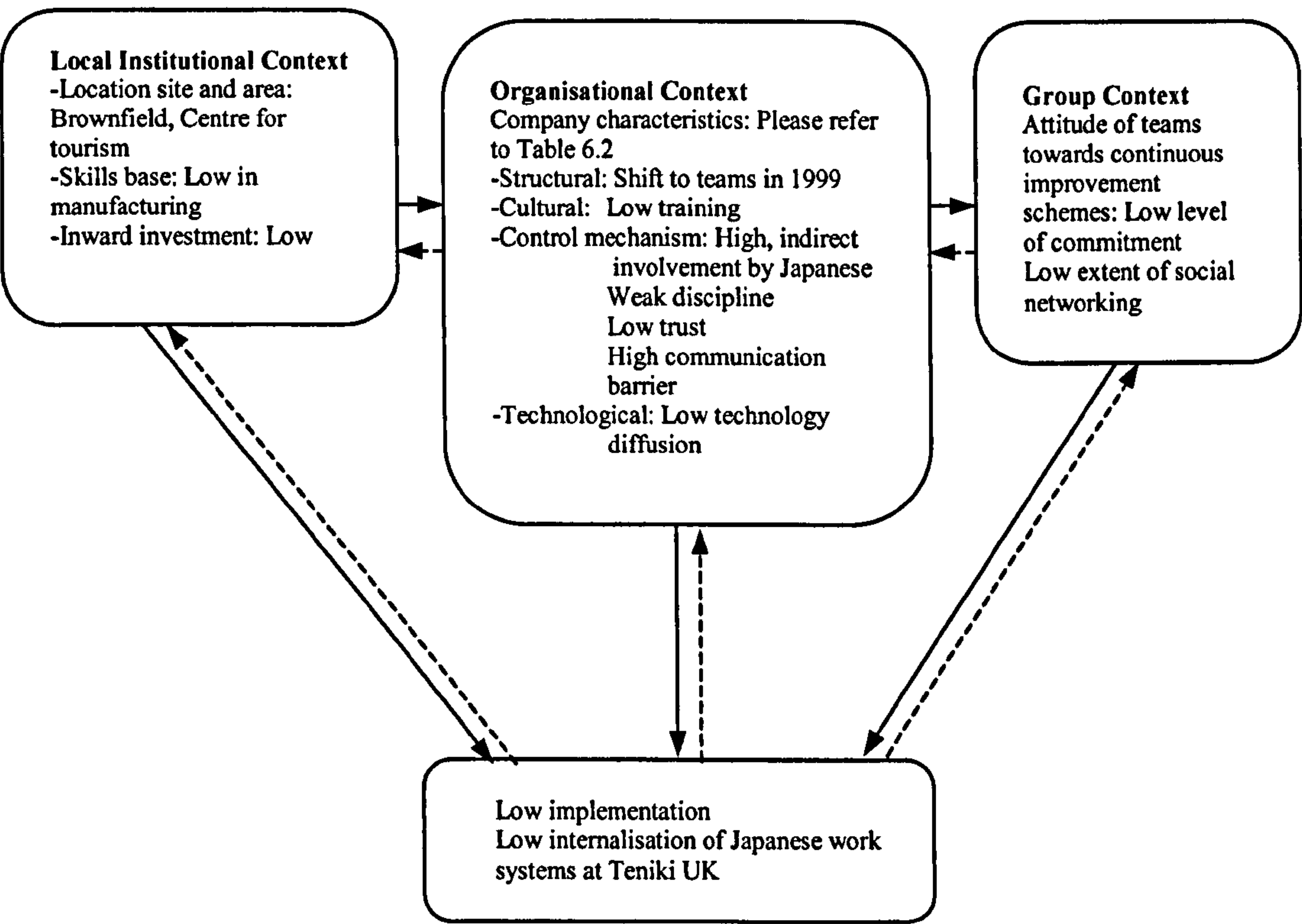
The following discussion provides a summary of the discussion on the nature of the local institutional, organisational and group contexts and their influence on the degree of implementation and internalisation of Japanese knowledge-driven work systems at Teniki UK, Nissera UK and the Rover-Honda collaboration in the automotive manufacture industry (see Figures 6.4, 6.5 and 6.6). These figures constitute an application of the analytic framework to each of the three cases. They present variations in local

institutional, organisational and group contexts across the three sites.

The impact of the variation in the national institutional context between Japan and the UK (as discussed in Chapter 3) with regard to the internalisation of Japanese knowledge-driven work systems at the three sites is assumed to be the same, as all the three cases are located in the UK and are involved in a particular form of ownership with a Japanese MNC. The difference in the outcome across the three cases is, rather, determined by the variation in local institutional, organisational (including company) and group characteristics.

The nature of the implementation and internalisation of Japanese knowledge-driven work systems at Teniki UK (see Figure 6.4) is one of low implementation and low internalisation. Some of the characteristics that influence this development include the location of the company in a centre for tourism on a brownfield site, low skills base in manufacturing, weak discipline, low training, indirect involvement of Japanese management, low level of commitment among workers to continuous improvement initiatives, low technology diffusion and low extent of social networking. A low level of industrial dispute in the area appears not to influence the implementation and internalisation of work systems and, hence, is not included in Figure 6.4.

Figure 6.4 The Implementation and Internalisation of Japanese Work Systems at Teniki UK



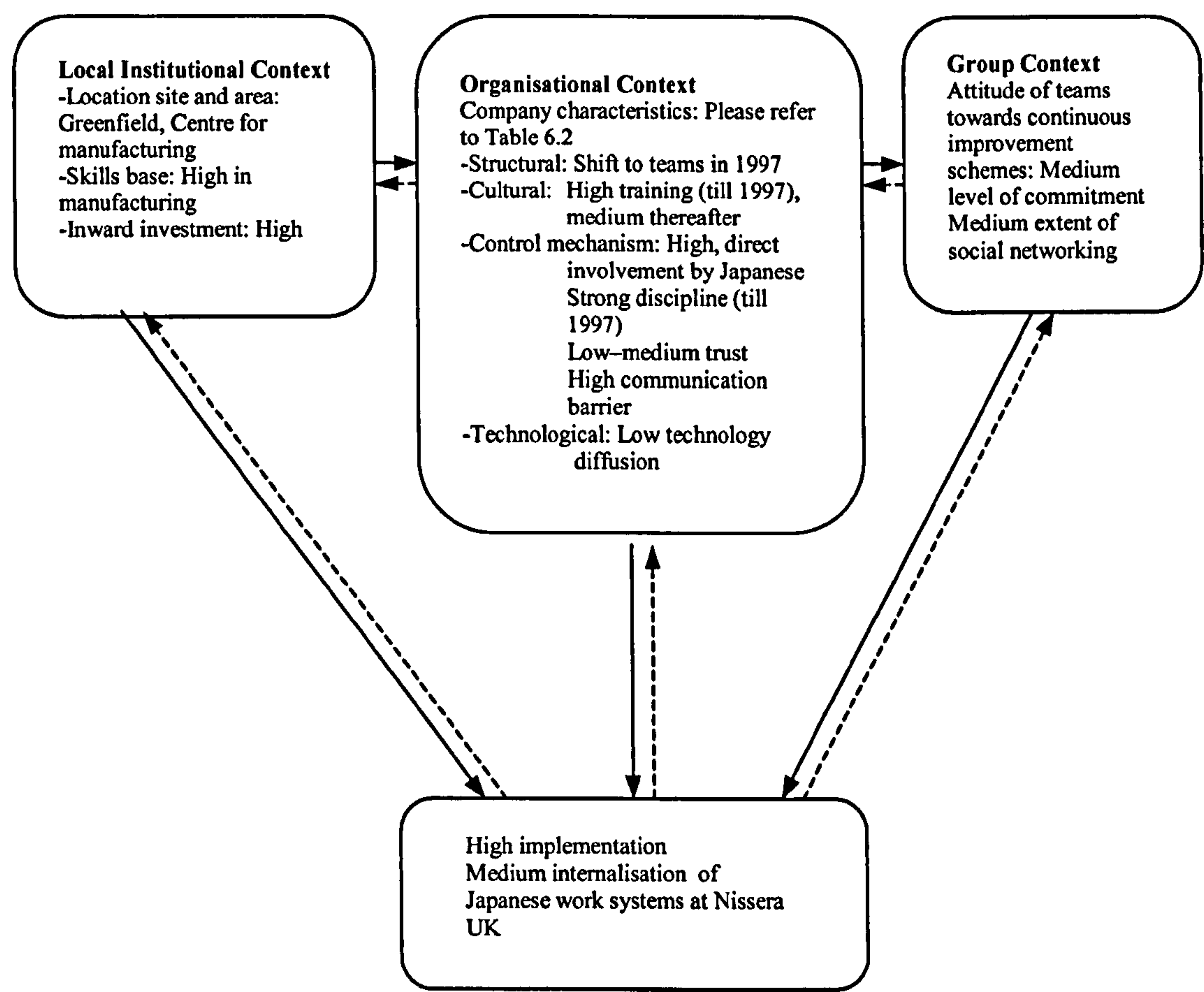
Source: See text

In contrast with the findings at Teniki UK, the degree of implementation at Nissera UK is high and that of internalisation is medium (see Figure 6.5). The location of the company in a centre for manufacturing and on a greenfield site, high skills base in manufacturing, strong approach to discipline, high emphasis on training (at least till 1997) and medium level of involvement in social networking and medium commitment on the part of the workers at Nissera UK facilitate the implementation and internalisation of Japanese knowledge-driven work systems. Favourable key local institutional characteristics are more dominant than the unfavourable characteristic of a high level of industrial dispute in the area. In contrast to one’s expectation, location in a centre for manufacturing and small supply of unskilled workers facilitate rather than hinder implementation and

internalisation of work systems. High labour dispute in the area does not appear to have a significant impact on the implementation and internalisation of work systems. There is an appropriation or translation (Clark and Newell, 1993), rather than emulation, of Japanese work systems where there is lack of high and direct involvement of key actors (i.e. Japanese expatriates) in Nissera UK's shop-floor activities. This is particularly noticeable in the period after 1997.

In the case of Nissera UK, the 'trickling-up' impact on the national level can be observed in the area of training and education. The forms of training and education shift from a rather transmissive, classroom mode of imparting skills to a more participative and interactive mode, whereby workforce gains a more integrated understanding of the production system. Local practices can initiate attitudinal change in a piecemeal fashion.

Figure 6.5 The Implementation and Internalisation of Japanese Work Systems at Nissera UK



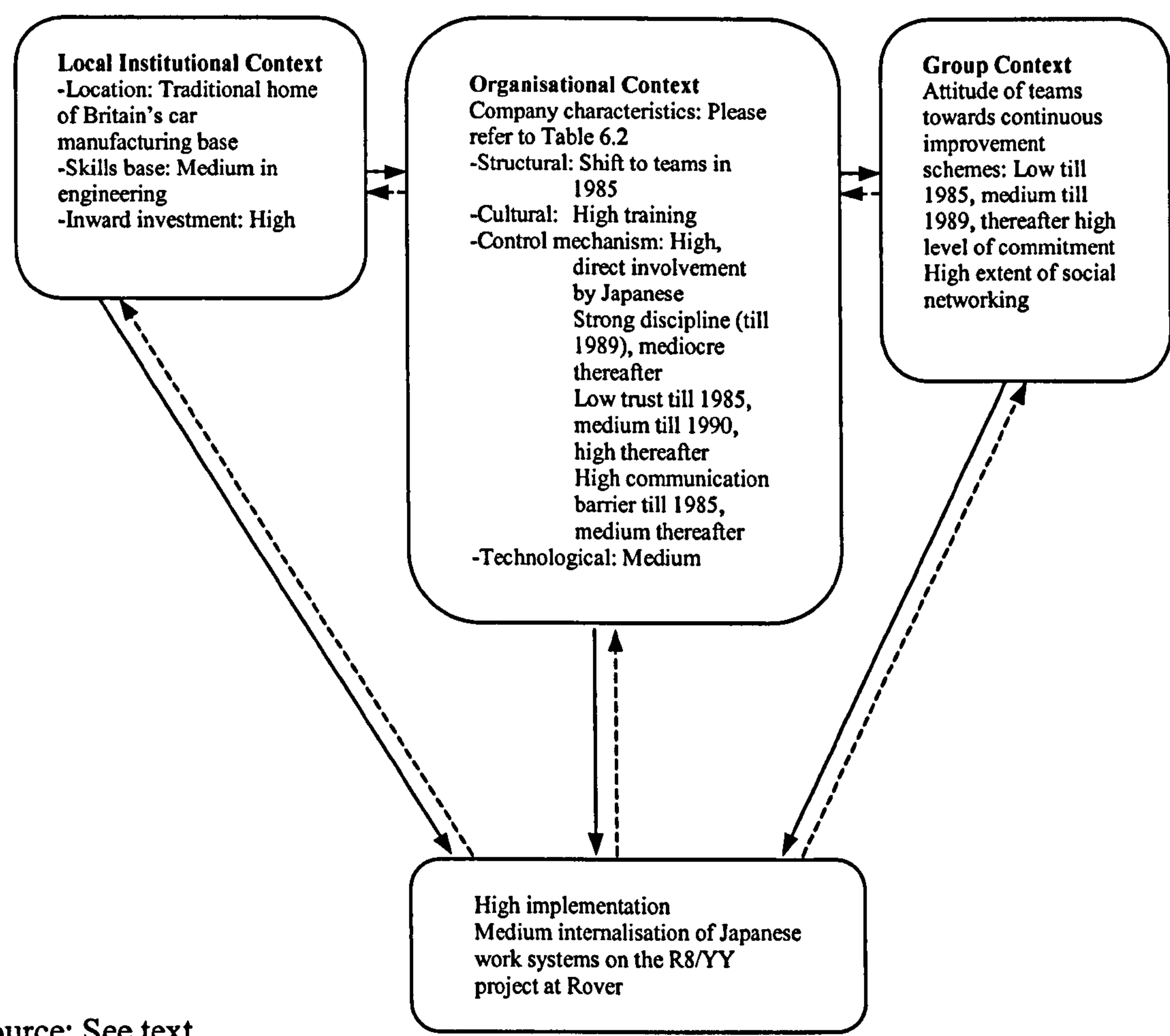
Source: See text

The findings at the Rover-Honda collaboration (R8/YY project) (see Figure 6.6), as with those at Nissera UK, suggest high implementation and medium internalisation of Japanese knowledge-driven work systems. This outcome is facilitated by a medium skills base in engineering, high level of training, high and direct involvement by Honda members, a strong approach to discipline (till the completion of the project in 1989), a medium level of technology diffusion, high level of involvement in social networking and medium level of commitment to continuous improvement schemes among Rover members. The location of the company in a traditional home of Britain’s car

manufacturing sparked worker resistance, particularly on the shop floor. However, as far as this research is concerned, a high level of industrial dispute in the area did not have an impact on the implementation and internalisation of work systems by Rover engineers.

Honda practices were 'edited' by those who had not been to Japan or worked with Honda members, as illustrated by the way Gebba-Kais were implemented upon the divorce of Rover from Honda in 1994. In other words, the process of 'editing' or local interpretation of alternative work systems that involved multiple actors and logics was moulded by the current norms and structures. Consequently, in the absence of these key templates, which were articulated through joint engineering team meetings, company visits and any other form of direct interaction with Honda members, full acceptance of Japanese practices was discouraged.

Figure 6.6 The Implementation and Internalisation of Japanese Work Systems at the Rover-Honda Collaboration



Source: See text

In spite of the unfavourable institutional characteristics, such as location in a traditional manufacturing area and high level of industrial dispute, the degree of implementation and internalisation of Japanese work systems at Rover on the R8/YY project has relatively been high. Favourable organisational and group characteristics have a major influence on this outcome.

6.4 Revisit to the Propositions

In Chapter 3 (Section 3.2), a total of five propositions had been formulated about the

combined influence of nationally and locally distinct institutional settings on the implementation and internalisation of Japanese knowledge-driven work systems. The five propositions run across a scale (based on Table 3.3 in Chapter 3) composed of distinct combinations of favourable and/or unfavourable key institutional, organisational and group characteristics that are likely to have an impact on the implementation and internalisation of Japanese work systems in varying degrees. Figure 6.7 (on page 301) summarises the results of the match between the propositions and empirical findings. Propositions 1 and 2 represent the extreme points on the scale. Propositions 3 to 5 cover the possible impact of intermediate institutional settings on the degree of implementation and internalisation. The propositions are iterated with follow-up discussions below.

Proposition 1

Affiliates of firms in highly-institutionalised environments that are operating in unfavourable institutional settings (as those delineated in Table 3.3) are likely to exhibit a low degree of implementation and internalisation of Japanese work systems.

Proposition 2

Affiliates of firms in highly-institutionalised environments that are operating in favourable institutional contexts (as those delineated in Table 3.3) are likely to exhibit a high degree of implementation and internalisation of Japanese work systems.

These two propositions, which represent ‘ideal’ states, are not observed in the cases

examined. They can be tested through future research on cross-national comparison of the diffusion of work systems in Japan and the UK (see Chapter 7). The same applies to proposition 5.

Proposition 5

Incoherent pattern of high and low degree of implementation and internalisation is likely to develop in settings which lack key institutional, organisational and group characteristics that are favourable or unfavourable.

As the three cases rather display 'intermediate' settings, where some of the favourable key institutional, organisational and group characteristics are more dominant than unfavourable ones, the fifth claim cannot be tested here. This also deems future research. However, the combined research findings across the three sites indicate that shifts in the nature of institutional, organisational and group characteristics can lead to changes in the degree of implementation and internalisation of knowledge-driven work systems.

Proposition 3

Affiliates of firms in highly institutionalised environments that are operating in settings in which unfavourable key institutional, organisational and group characteristics are more dominant than the favourable ones are likely to exhibit a low degree of implementation and internalisation of Japanese work systems.

The research findings on the degree of implementation and internalisation of Japanese

work systems at Teniki UK support this claim. The nature of the business system typified by ‘compartmentalised’ structural legacy and ‘Taylorist’ cultural legacy is representative of Teniki UK’s national institutional context. The diffusion of Japanese knowledge-driven work systems is negatively influenced by the company’s location on a brownfield site in a centre for tourism (which provides low skills base in manufacturing, hence needs to be taken as unfavourable rather than favourable in this context).¹²¹ Moreover, there is a large supply of unskilled workers (which is also taken here as unfavourable rather than favourable) in the area. Teniki UK management focuses on diffusing explicit practices. At the group level, there is a low level of commitment and low extent of social networking. These multilevel characteristics in combination tend to be more dominant than the positive impact that a low industrial dispute in the region can have on the implementation and internalisation of work systems.

Proposition 4

Affiliates of firms in highly-institutionalised environments that are operating in settings in which favourable key institutional, organisational and group characteristics are more dominant than the unfavourable ones are likely to exhibit a high degree of implementation and internalisation of Japanese work systems.

There is strong evidence from the case studies to suggest that the extent to which alternative work systems are accepted is higher at Nissera UK than at Teniki UK. The local institutional setting of Nissera UK is marked by a large supply of skilled workers

¹²¹ Location in a centre dominated by the service industry was expected to limit the implementation and internalisation of work systems (see Table 3.3 in Chapter 3).

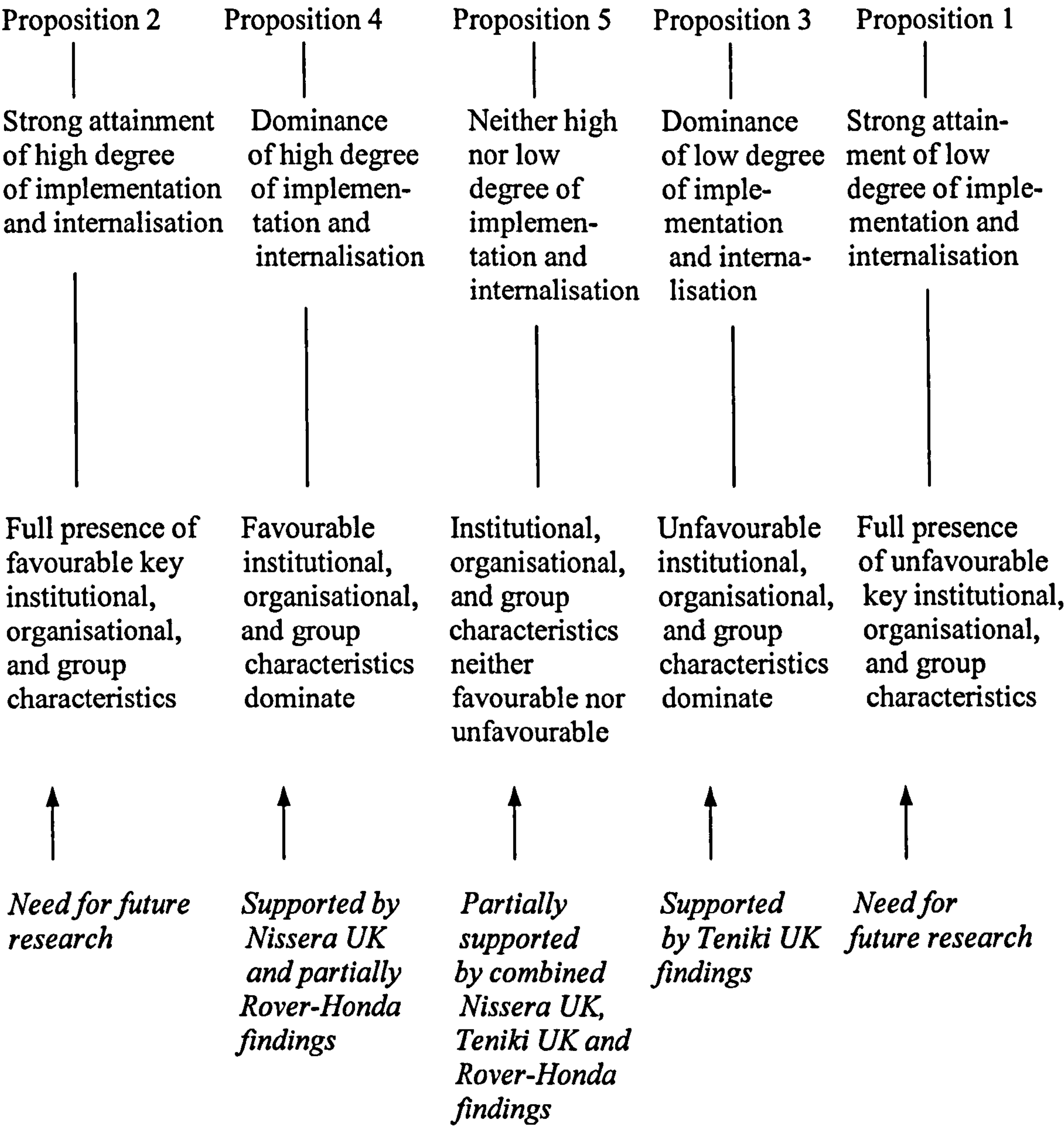
(taken as favourable in this context as opposed to what was delineated in Table 3.3 in Chapter 3) and location on a greenfield site with a high inward investment. Moreover, the company is located in a centre for manufacturing, which tends to be more desirable to Japanese management as the workforce has the basic skills necessary for fundamental training in continuous improvement schemes. The national institutional environment is not characterised by a 'highly co-ordinated' organisational structure and a 'paternalist' organisational culture, given that the firm is located in the UK business system. Nevertheless, favourable key local institutional and organisational characteristics, such as heavy emphasis on cultural and control-related practices or tacit work systems, as well as a medium level of commitment and medium extent of social networking at the group level, are more dominant than the unfavourable characteristics. An analysis of the national institutional setting alone would have led to a conclusion that the degree of internalised work systems was low.

The Rover-Honda case has a similar institutional make-up as that of Teniki UK in terms of its embeddedness in a 'compartmentalised business' system and the existence of pre-established work routines. However, Rover's emphasis on both tacit and explicit knowledge over the course of the R8/YY project, relatively high skills base in engineering, high inward investment and key organisational strategies dominate to yield a medium level internalisation of Honda systems.

It should be noted that, unlike what was expected in Section 2.2.1.4 in Chapter 2, a high level of implementation of alternative work systems is not necessarily associated with a

high level of internalisation. Nissera UK and Rover cases indicate that despite high levels of implementation, the internalisation of Japanese work systems is medium. Future research can shed light upon the characteristics that are likely to have an impact on the level of implementation alone, separate from those that are likely to influence the level of internalisation (see Chapter 7).

Figure 6.7 Feedback to the Propositions



Source: See text

6.5 Summary

This chapter has compared and contrasted findings from the case studies on the implementation and internalisation of Japanese knowledge-driven work systems in two

UK subsidiary firms and an Anglo-Japanese technical collaboration in the automotive manufacture industry. It has discussed the variation in the degree of implementation and internalisation of Japanese work systems that reflects locally distinct settings across the brownfield subsidiary (Teniki UK), greenfield subsidiary (Nissera UK) and technical (Rover-Honda) collaboration sites. The extent to which work systems are implemented and internalised contrasts greatly between Teniki UK and the combined Nissera UK and the Rover-Honda collaboration (R8/YY project) findings along the following key dimensions: the local institutional characteristics, such as location site and area and inward investment; the company size and age and terms of financing; the nature of diffused practices; and the nature of group attitudes and the extent of social networking. It is argued here that work systems are embedded at the national and firm levels. The empirical findings support the third, fourth and fifth propositions. In other words key national and local institutional, organisational and group characteristics have predominantly high or low impact on the degree of implementation and internalisation of knowledge-driven work systems.

CHAPTER 7

CONCLUSIONS

This concluding chapter presents a review of the key findings that are fed back to the central research question. In addition, the implications of research findings for theory development and practice are discussed. Moreover, attention is paid to the limitations of this study. Lastly, an agenda for future research is presented and concluding remarks are made.

7.1 Key Findings in Response to the Central Research Question

The degree of implementation and internalisation of knowledge-driven work systems in three Japanese affiliate firms in the UK automotive manufacture sector has been described, analysed and compared (see chapters 5 and 6). In this context, work systems are taken as continuous improvement activities that are driven by people's tacit knowledge as well as the explicit structural and technical systems (see Chapter 2). The diffusion of work systems is seen as incorporating people management (or management intervention) as well as the internalisation of these work systems by users (see Chapter 2). The degree of internalisation is examined at two levels, in relation to institutional embeddedness at the macro national level and embeddedness of tacit work systems at the micro firm level (see Chapters 2 and 3). The macro-level embeddedness is understood as the shaping of work systems by structural and cultural understandings of a country, which constitute distinct business systems. Japanese and UK business systems represent 'highly

co-ordinated' and 'compartmentalised' business environments (see Chapter 3). The highly co-ordinated business systems and paternalist cultural legacies of firms are seen as limiting the diffusibility of work systems. In other words, the embeddedness of Japanese firms in distinct institutional legacies challenges the diffusibility of their work systems to other institutional settings. The micro-level embeddedness is taken as the extent to which work systems are bound to tight networks of social relations, whereby the emphasis rests more on tacit than explicit knowledge. The emphasis on tacit aspects of work systems is also discussed here as limiting the diffusibility of work systems (see Chapter 3).

The degree of implementation and internalisation of Japanese work systems has been addressed with regard to the nature and relevance of local institutional, organisational and group characteristics. The location site and area and the associated skills base are taken as key local institutional characteristics. Strong government support for investment (constituting another local institutional characteristic) in the region is seen as encouraging the diffusion of quality management standards to and the enhancement of skills at the UK adopter firms. At the organisational level, company size, age and terms of financing, and the nature of the diffused practices are seen as influencing the implementation and internalisation of work systems. At the group level of attitudes, norms and values, the level of commitment to the diffused practices and the degree of involvement in social networking are seen as critical to the implementation and internalisation of work systems (see Chapters 2 and 6). Based on the review of the literature, along the dimensions of the nature and historical roots of social institutions, on Japanisation, innovation processes, and neo-institutionalism, debates on the user-oriented perspective within the innovation

processes literature and the historical neo-institutional perspective within the neo-institutional literature are seen as appropriate in identifying a list of key national- and firm-level characteristics that are influential in the diffusion of work systems. The social institutions operating at a national level include the state, financial system, public training system, legal system, authority relations and union strength. In terms of cultural legacies, the following aspects are regarded as significant in shaping the diffusion of work systems: task fragmentation, worker discretion and involvement, managerial control of work organisation, separation of managers from workers and employer commitment to employment security (see Chapters 2 and 3). At the firm level, the role of actors in editing alternative practices at adopter firms is highlighted. The worker response to alternative work systems, incorporating their values and interests, is acknowledged in an effort to consider the social patterns shaping the diffusion process (see Chapter 2).

This study reveals considerable differences with regard to the diffusion or the extent of implementation and internalisation across the three cases in the UK automotive sector. The observed differences are associated with the variation in key local, institutional, organisational and group characteristics. The combined influence of the national and local institutional, organisational and group characteristics differs greatly across the three cases. At Teniki UK, the local institutional environment is not supportive of a high level of internalisation of Japanese knowledge-driven work systems. The location of the company on a brownfield site in a centre for tourism is challenging the acceptance of alternative work systems. The emphasis on tourism in the region creates low skills base in manufacturing, which is not found to be a favourable condition to imparting

continuous improvement principles to operators at Teniki UK. In addition to the large supply of unskilled workers, there is low inward investment and emphasis by management on the diffusion of structural practices and 'decontextualised' continuous improvement techniques. There is also a low level of commitment by groups to such techniques. The low level of commitment is associated with the conflict between pre-existing group norms and those required by the new practices. Teniki UK's limited financial and human resources and emphasis on explicit practices in continuous improvement schemes hinder efforts to sustain high levels of acceptance of such schemes among operators. The indirect involvement of a limited number of Japanese expatriate managers and low extent of social networking at Teniki UK results in appropriation of alternative work systems. Work systems are translated by workers who are accustomed to an alternative organisational routine and adhere to group norms that are different from those expected by the Japanese.

The local institutional environment of Nissera UK is considerably more supportive of the internalisation of Japanese work systems. The combined influence of key institutional, organisational and group characteristics encourages a higher degree of internalisation of work systems at Nissera UK. The company is located on a greenfield site in a centre for manufacturing. This is an area marked by a large supply of skilled workers, providing Japanese management with the foundation necessary for operators to grasp continuous improvement techniques and philosophies. A sufficient number of Japanese expatriates work in the subsidiary to diffuse both tacit and explicit practices in continuous improvement schemes. They work within a context of financial stability. There is also a

higher level of commitment to alternative work systems and involvement in social networking at the group level than at Teniki UK. Given the absence of any tradition of manufacturing under British ownership and the long period spent in operation under Japanese ownership, Nissera UK workers demonstrate a higher level of internalisation of the principles of teamwork and self-discipline in improving process efficiency and product quality than their counterparts at Teniki UK.

The institutional make-up of the Rover-Honda collaboration does not seem encouraging at first glance. The location of the UK partner in a centre for traditional British manufacturing can be expected to limit the implementation and internalisation of work systems, as pre-institutionalised group norms and organisational routines conflict with the requirements of alternative work systems. For example, the management system of Rover did not provide much 'independence' to individuals or work groups prior to the company's collaboration with Honda. The widely-perceived Japanese characteristic of commitment to small-group activities was not widely followed by Rover workers. However, the management initiatives of establishing a liaison office, shifting to a project-based structure and emphasising discipline, training, trust formation, social networking and commitment to joint engineering in 1985 encouraged the implementation and internalisation of Honda practices by Rover engineers. The research findings show that the interplay of actors, resources and activities is more noticeable in the technical collaboration case than it is in the brownfield subsidiary case due to the direct involvement of actors and availability of resources in the diffusion of both tacit and explicit systems.

On the whole, the diffusibility of work systems from a strong institutional context, such as Japan, to a relatively weak one, such as the UK, is hindered by conflicting organisational structures and cultural legacies (Inkpen and Dinur, 1998). The degree of internalisation of work systems is not extremely high in any of the three firms. The original meaning of Japanese source firms' practices appears to be difficult for the UK adopter firms to grasp. The work systems in Japan are embedded in a wider social context, characterised by high levels of state risk-sharing, a credit-based financial system, strong intermediaries, high market regulation, some union strength, limited public training system and high trust in formal institutions (Whitley, 1999b). Highly co-ordinated business systems encourage firms to rely on established relationships to reduce uncertainty and create paternalist organisational cultures. In spite of the current transition in Japanese economy and doubts over the success of Japanese management system, employment stability, flexible personnel policies and employee identification with the company are still predominantly at play in the automotive sector in Japan. They work to create a habitat conducive to participative, hands-on management, as well as commitment to continuous improvement schemes, teamwork and OJT and technical advancement (McMillan, 1996). In contrast, work systems in the UK are embedded in a compartmentalised business system characterised by industrial relations that are predominantly marked by 'arm's length' and typically adversarial relations between management and employees, formal systems of rules and procedures that minimise reliance on personal relationships and weak systems in skills training and control. Compartmentalised systems discourage sharing of idiosyncratic knowledge with employees and business partners. Pronounced differences among managers, supervisors

and workers and the desire for bureaucratic control tend to hinder the development of teamwork (see Chapter 2). Moreover, lower employment security and the associated lower investment in skills development in compartmentalised systems have meant less attention paid to the significance of employee interests on decision making (e.g. Sako, 1992).

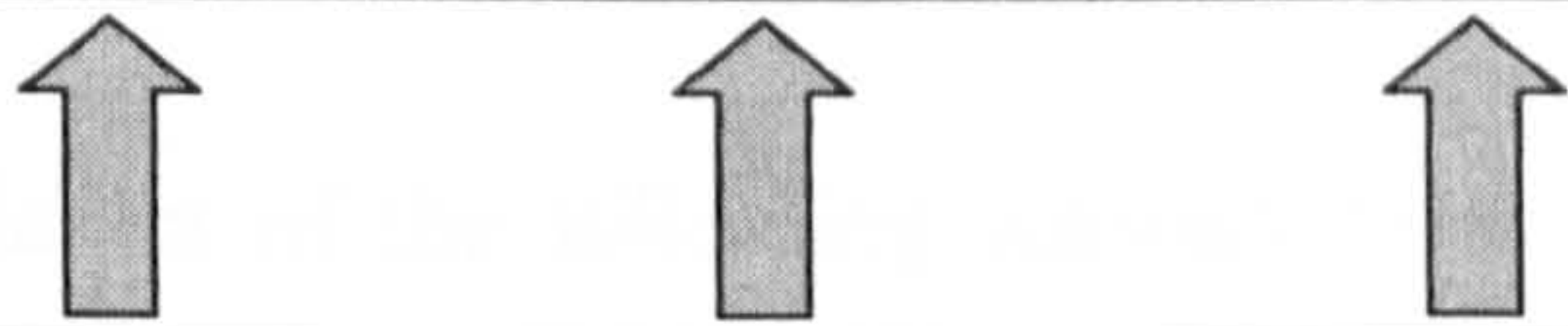
The diffusion of work systems is also complicated by the variation in emphasis on tacit and explicit practices between Japan and the UK. Work systems are seen as of high tacitness in Japan due to the reliance on an environment of organisational learning, consensus decision-making and on-the-job and continuous education at the operational level. The human element of knowledge production is brought to the forefront. However, the UK managers, as discussed in Chapter 3, focus more on explicit knowledge that is relatively easy to measure, control and process. There is separation of ownership from control and greater inclination to resort to legalistic measures in interactions. As the cases in this study indicate, there is a tendency for UK management to show interest in the diffusion of structure and technology as opposed to a complex set of meanings attached to work systems. There have been efforts, such as that of the DTI with Towards Integration Programme launched in 1987, to increase awareness of UK management towards philosophies rather than technology as key to Japanese competitors' success. In spite of such efforts, processes of adoption in the UK still seem to be characterised by a diffusion of one or two particular management techniques in isolation from the broader strategy and philosophy of lean production.

The influence of nationally distinct social institutions that show divergence in business systems *across* countries, local institutions that point to divergence *within* a particular business system, and organisational and group characteristics that highlight the role of actors (management initiatives and interpretation of alternative work systems by adopters) is reflected by the degree of implementation and internalisation across Teniki UK, Nissera UK and the Rover-Honda collaboration (the R8/YY project).

The degree of implementation and internalisation of knowledge-driven work systems is remarkably higher at Nissera UK and the Rover-Honda collaboration than it is at Teniki UK. Figure 7.1 provides a condensed overview of the research results.

Figure 7.1 Summary of the Degree of Implementation and Internalisation and Key Institutional, Organisational and Group Characteristics at Play at Teniki UK, Nissera UK and the Rover-Honda Collaboration

Degree of implementation and internalisation		Teniki UK	Nissera UK	Rover-Honda R8/YY Project
	Implementation	Low	High	High
	Internalisation	Low	Medium	Medium



Key National and Local Institutional Characteristics	Unfavourable compartmentalised structural legacy Taylorist cultural legacy Emphasis on explicit knowledge	UK business system		
	Location site, area, skills base and inward investment	Brownfield Centre for tourism Low Low	Greenfield Centre for manufacturing High High	Traditional manufacturing base Medium High
Key Organisational Characteristics	Company size, company age (from establishment to data collection/end of project) and terms of financing	Medium 3 years Short-term orientation	Medium 11 years Long-term orientation	Large 11 years (to the completion of the R8/YY project) Long-term orientation
	Emphasis on the nature of diffused work systems	Explicit structural practices	Tacit cultural, control-related and explicit structural practices	Tacit cultural, control-related and explicit structural and technological practices
Key Group Characteristics	Attitude of teams towards diffused work systems: level of commitment	Low	Medium	Medium
	Extent of social networking	Low	Medium	High

Source: Chapters 5 and 6

The results of this study show that UK adopter firms display different levels of implementation and internalisation despite their presence in the same national business system. This will be elaborated in Section 7.2 on theoretical implications.

7.1.2 In Response to the Central Research Question

The research findings enable the formulation of the following answers to the central research question:

What is the impact of national and local institutional variation on the diffusion of knowledge-driven work systems in multinational corporations' internationalisation efforts?

It has been found that firms are embedded in both national and local institutional contexts which are comprised of a range of distinct characteristics that are either favourable or unfavourable to the development of particular degrees of implementation and internalisation. The empirical findings at Teniki UK show that the combined influence of nationally distinct structural and cultural legacies and local institutional, organisational and group characteristics are unfavourable to the implementation and internalisation of Japanese work systems. At Teniki UK, the combination of a compartmentalised structural legacy and a Taylorist cultural legacy with location on a brownfield site in a centre for tourism is found to have a negative impact on the implementation and internalisation of work systems at the UK adopter firm. The low degree of implementation and internalisation of work systems is also related to a large supply of unskilled workers, low

inward investment in the region, an emphasis by management on the diffusion of explicit practices and low level of commitment at the group level. In contrast, despite an unfavourable national business system, the combined influence of favourable local institutional, organisational and group characteristics is found to encourage the implementation and internalisation of Japanese work systems at Nissera UK and the Rover-Honda collaboration. At Nissera UK, it is found that the combined influence of a large supply of skilled workers, location on a greenfield site in a centre for manufacturing, high inward investment; heavy emphasis by management on explicit and tacit practices; and a medium level of commitment and medium extent of social networking facilitates the implementation and internalisation of Japanese knowledge-driven work systems. The positive influence of an emphasis on both tacit and explicit practices, and high skills base and high inward investment in the area on the implementation and internalisation of alternative work systems also applies to the Rover-Honda collaboration. The impact of these three characteristics is more dominant than that of Rover's location site. The time element in working with alternative work methods strengthens the impact of the three characteristics. It should be noted that both Nissera UK and the Rover-Honda collaboration are older sites than Teniki UK. In short, the empirical evidence found in this study underpins the conclusion that the relative ease with which work systems of multinational corporations are implemented and internalised by adopter firms varies with the nationally and locally distinct nature of a range of key institutional, organisational and group characteristics.

7.2 Theoretical Implications

7.2.1 The Institutional Embeddedness of Economic Organisations

The propositions that were deduced from the analytic framework in Chapter 2 were linked to the empirical findings in Chapter 6. In-depth analysis of three case studies; namely Teniki UK, Nissera UK, and the Rover-Honda collaboration (the R8/YY project) in the UK automotive sector have generated insights into how UK adopter firms implement and internalise Japanese knowledge-driven work systems. A comparative case study across three UK affiliate firms of Japanese MNCs has shed light upon the influence of nationally and locally distinct institutional environments on the diffusion of Japanese work systems to the UK (see section 7.1). This supports the arguments in the neo-institutional literature on the institutional embeddedness of economic organisations (see Chapter 2). A striking point to note here is that the nature and influence of key institutional characteristics can differ from region to region within the same sector in the same country (see Chapter 6). The degree of implementation and internalisation of work systems is likely to vary accordingly. In other words, the nature of the same type of institutional characteristics, such as skills level in a given region, can vary considerably across different sites that are located in a single country, or in the same national business system. This variation also applies to characteristics at the organisational and group levels. The degree of implementation and internalisation, shaped mainly by location site, company age and size, terms of financing, nature of diffused practices, group attitudes and extent of social networking, across the three firms is specific to the given sites, despite the fact that the firms are under the influence of the same national institutional characteristics.

The findings here contribute to the debate on the divergence of capitalist systems to which authors such as Campbell *et al.* (1991) and Hollingsworth and Boyer (1997) have contributed. At the same time, the findings differ from existing observations on neo-institutionalism in that empirical evidence is provided on different regional institutional systems in the UK within the same sector, taking into account the difference in the nature of diffused practices. Firm level analysis complements regional level analysis by considering the differences in organisational and group characteristics across different local institutional settings. Consequently, this study rejects the argument that there is convergence in institutional systems due to the pressures of globalisation. Whilst there is some evidence to suggest that the ‘path-dependent’ distinctiveness of national forms of capitalist organisations still apply (Ferner, 2000), firms are not as uniform or isomorphic within each capitalist system as is suggested by authors such as Orrù *et al.* (1991). As the study shows, the diffusion of practices across nations does not necessarily promote convergence. Rather, there is ‘persistent differentiation’ (Djelic, 1998) when local institutional differences and the role of actors at the firm level are taken into account in order to examine the diffusion of work systems across nations.

In brief, the contribution of this research is two-fold: first, it contributes to the historical neo-institutionalism by highlighting the historical influences of a business system on the subsequent development of institutional arrangements and the associated limits to homogenisation of ways of operating; second, it contributes to the debates in the innovation processes literature by demonstrating the importance of actors and agency in the diffusion of work systems in a new empirical context, that of a shop floor in the

automotive sector. Knowledge diffusion and learning occur with equal importance on the shop floor as they do in knowledge-intensive firms such as consultancies, software companies and innovation centres. Hence, the research is not based on a single-organisational type, that is the commonly researched knowledge-intensive firms.

This study also presents multilevel influences on the internalisation of Japanese knowledge-driven work systems. There are very few multilevel comprehensive studies that focus on both structure *and* process in the diffusion of work systems across nations (exceptions include Maurice *et al.*, 1986; Sorge, 1989, 1996; Child and Loveridge, 1990). For example, Sorge (1996:73) highlights the structure and flow aspects of organisational, human resources, industrial-sectoral, labour market and technical dimensions in the 'reproduction of societal patterns'. However, the empirical sample in his work includes European firms alone. The significance of the present study rests on its efforts to bring together discrete strands of work. The focus is not on social patterns of interaction at the firm level alone. This study contributes to the minority of studies that have addressed the sectoral characteristics of nations (e.g. Porter, 1990) and technological innovation (e.g. Pavitt, 1984). The focus is on the role of social institutions in explaining the dynamics of work systems diffusion. Hence, there is an attempt to highlight the *structural influences* on diffusion as well as the *process* of internalising work systems within organisations. The focus on the *internalisation* process eliminates a static orientation that is commonly observed in innovation research that focuses on *implementation* alone (Wolfe, 1994). In other words, the study considers both technical and social arrangements (Sorge, 1989). In accordance with the findings of Rogers (1983), this study shows the following influences

on the diffusion of work systems: (i) the adopter firm characteristics, and (ii) the social network to which adopters belong. Hence, structural characteristics are not taken as the primary determinants of the diffusion of knowledge-driven work systems. The study also demonstrates that the nature of work systems (i.e. tacit cultural and control-related and explicit structural and technological features) can influence the implementation and internalisation process.

The current study moves away from a deterministic perspective on diffusion towards an investigation of the nature of characteristics that are likely to influence diffusion *processes* and how the influences interact. The unit of analysis is the *diffusion process* itself. Hence, the study incorporates process-oriented research that involves cross-sectional description of the conditions that influence the implementation and internalisation process. This research differs from the work of researchers in the innovation processes literature, such as Norton and Bass (1987) and Attewell (1992), by extending its scope beyond the influence of organisational and work systems characteristics on the extent of work systems diffusion to include the influence of the national and local institutional characteristics.

Work systems are treated here as relatively changing entity. At the micro-level, the highly context-dependent Japanese knowledge-driven work systems can be ‘appropriated’ upon their diffusion to a different business system (Clark, 1987). At the macro level, work systems that are closer to institutional norms and practices of adopter firms may be more widely diffused. In contrast to the isomorphism and convergence

arguments in the neo-institutional theory (e.g. DiMaggio and Powell, 1991; Abrahamson, 1996), adopter firms do not necessarily mimic a particular work system that they consider highly effective and efficient. The research findings suggest that firms attempt to locally interpret alternative work systems rather than submit to environmental pressures toward isomorphism. Incompatibility in institutionalised patterns of operating is not shaped by technical efficiency criteria. There is an enactment through social patterns of interaction in organisations. Organisations are simply not driven to incorporate practices and procedures defined by prevailing rationalised concepts of organisational work that are institutionalised in society. As the cases in this study show, there is not a standard acceptance of alternative work systems. The diffusion of systems incorporates variability in actors' responses in similar institutional environments such as the same national institutional setting. For instance, in the context of this study, similar continuous improvement activities vary in the extent of their implementation and internalisation across the three companies. This is due, at least in part, to variations in the social environments in which they are embedded (Hollingsworth and Boyer, 1997).

7.3 Practical Implications

7.3.1 General Implications for Management

As was pointed out in Chapter 2, the diffusion of work systems can be regarded as a critical management issue, for it is closely associated with competitive strength. The implementation and internalisation of work systems has implications for the quality and productivity of the output produced. The quality and productivity concerns require well-thought-out and planned human resource practices that can allow tacit knowledge of

employees to develop and interact with the firm. Firms that are familiar with the knowledge-driven nature of their work systems can be expected to invest in the people they hire and train in order to impart both the techniques and philosophies of continuous improvement schemes to them. For example, high employee turnover, which is seen as a problem in sustaining the Japanese training system in UK adopter firms, suggests a need to adopt a long-term perspective to developing employees. It is argued that the largest return on investment in training can be recovered only over a long-term relationship (Cutcher-Gershenfeld *et al.*, 1998). Hence, it is important to allow time to build sustained interdependent relationships and to invest in social contracts. This also means emphasising tacit as well as explicit practices in continuous improvement to create an environment that is a nexus for learning and creativity. Some of the specific micro-level characteristics identified in this study as salient in the implementation and internalisation of Japanese knowledge-driven work systems can serve as inputs to knowledge creation. For example, the level of trust and communication assumes an increased significance in knowledge creation of the added importance of people in organisations.

This study shows that the sense-making process of employees has a role to play in the effective implementation of alternative work systems. A long-term perspective and hands-on approach to management may build the employee commitment necessary in the implementation of alternative work systems. It is also advantageous to be sensitive to the local institutional characteristics or social attributes pertaining to each location site in nurturing and recreating firm-specific skills across national boundaries. As Fruin (1997) shows, emulation and adaptation rather than imitation tends to work. The interpretation of

employment practices such as employment security, seniority and job definition, job designs, staffing and skilling deployments has implications for the effective implementation of continuous improvement schemes. Given that “workplace-centred, co-operative human resource strategies are at the heart of Japan’s industrial success and several features of this approach are distinctive” (Fruin, 1997:212), it is important to recognise and reflect the understanding of continuous improvement as is held at the source company. Having a comprehensive view of the practices to be diffused can be helpful in facilitating the implementation and internalisation of work systems within the firm. In other words, structural, cultural, control-related and technological practices need to be diffused in combination for an integrated understanding of a source firm’s work systems. This has implications for generating innovations that provide opportunities for growth. It is the process of sense-making and knowledge creation, not just the results, that drives continuous improvement.

This study raises managerial awareness to the implementation of corporate policies at different organisational levels. The intention has been to highlight the inner workings and tensions within affiliate firms of multinational corporations through a multilevel study that systematically compares workers’ and managers’ views through interviews and participant observation. The interest in the process of internalising work systems can reveal insights into the dynamics between forces of convergence and divergence in organisation of work, as well as in managerial forms and institutions of industrial relations. Management can consider the fit with institutional environments, in addition to economic indicators, when carrying out strategic analyses prior to investments in

overseas markets to reduce the risk of failure of start-up operations or international alliances.

7.3.2 *Implications for Firms in the Automotive Sector*

Apart from the general implications for management addressed in the previous section, issues applicable to the current fundamental shifts in the UK and Japanese institutional environments can be discussed.

Changing Institutional Environments

By now, firms in the automotive sector are well aware of the changes in work systems that have swept through those vehicle manufacturers of the 'West' which have sought to emulate their Japanese competitors. "In Europe and in the USA, that process of change has been given added impetus by the arrival of Japanese transplant assembly plants and a growing R&D presence, together with the arrival of Japanese components suppliers" (GEAC, 1999). The automotive sector has been continually transforming in the way in which business is carried out, with 'Western' vehicle manufacturers emulating the new lean manufacturing and supply practices of the Japanese component suppliers and car manufacturers. This transformation tends to blur the boundaries of national business systems. The accelerating internationalisation of Japanese work systems sets the rules of competition in the UK automotive sector in that firms in this sector are urged to invest heavily in the development of knowledge and sufficient production capacity to avoid slipping into the role of marginal players with unfavourable prospects in the future.

With respect to the rapid industry-wide restructuring, the UK automotive sector seems to have an advantage over its Japanese counterpart. In comparison to the business system of Japan, the compartmentalised system of the UK is weakly institutionalised in terms of the nature of its obligational ties (see Chapter 3). Hence, competences of firms located in compartmentalised systems can be regarded as more mobile across borders.¹²² For example, Ferner (2000:32) argues that “knowledge stored in codified form is relatively transparent and accessible and, therefore, is readily transferable between business systems”. He regards the business knowledge and organisational capabilities of the US firms as explicit and codified, in comparison with those of Japanese firms, allowing them to be reproduced in foreign settings. It is argued that weak obligational ties allow compartmentalised systems to be more receptive to alternative work practices and competences (Whitley, 1999c). Firms in compartmentalised systems have the relevant institutional make-up to capitalise on the knowledge of others, as they are likely to be more externally-oriented to accommodate fragmented training systems, discourage collaboration and emphasise explicit knowledge than those in highly co-ordinated business systems.

The Japanese business system has also witnessed an ongoing restructuring process since the early 1990s. However, this change is more commonly observed in the financial than manufacturing sector. For example, Japanese company analysts’ roles and tasks have changed to include responsibility over primary as well as secondary market transactions

¹²² However, mobile competences are not necessarily associated with effective and efficient systems of production. For example, the fact that firms in compartmentalised systems may not have major overseas operations is not dependent on the mobility of competences alone. Such firms’ systems may not be seen as efficient and effective.

with the liberalisation of the Japanese financial market (Kubo and Saka, 2002). The traditional Japanese management system, based on lifetime employment and a seniority-based salary system (Sako and Sato, 1997), faces challenges with the 'Westernisation' of the financial industry (Hamada and Horiuchi, 1999). It should be noted that the Japanese financial industry interacts more readily with the 'Western' financial industry. Hence, it is influenced to a greater degree than, for instance, the Japanese automotive or the electronics industry.

The interactions of Japanese firms with generally Anglo-Saxon firms in home or international markets appear to have an impact on the broader institutional context, especially the labour market in Japan (Koike, 1993 in Kubo and Saka, 2002). Although there is a shift away from traditional, centralised bureaucracies to greater inter-firm collaborations, this is not strongly felt across all institutions in Japan. The threat of external competition has only recently been perceived as a problem. The blurring of institutional boundaries of the Japanese business system is much slower than that observed in the UK. It is far more difficult to initiate change in institutions that have grown strong roots in distinct cultures and social processes. For example, the egalitarianism embedded in Japanese society is claimed to deprive researchers and scholars of the economic incentives to pursue creative and innovative studies (Hirao, 2001). The national system of industrial relations in Japan is strongly institutionalised and integrated in tightly-knit, obligational networks (Alter and Hage, 1993; see Chapter 3). Its highly co-ordinated business system tends to discourage receptivity to alternative work systems. Given the strong embeddedness in networks of mutual obligations and

commitment, firms in the Japanese business system implement incremental, continuous change. This is well illustrated by the slow transformation of the Japanese economy since the burst of the bubble in the early 1990s (e.g. Dirks *et al.*, 2000).

7.3.3 Implications for Government Policies

The results from the analysis in Chapter 6 reflect the role of government in the automotive sector in the implementation and internalisation of alternative work systems by UK adopter firms.

The government has a drive to pursue a policy of extending ‘manufacturing excellence’ in every part of the UK. The diffusion of work systems in the spread of such ‘excellence’ is seen as vital to the country’s ability to compete in the future and to create wealth through productivity improvements across the whole economy. This is no wonder given that manufacturing “accounts for about a fifth of our [UK’s] national income with almost £150 billion of output per year” (Byers, 2001). Manufacturing processes are undergoing transformation as a result of increasing competition from newly industrialising countries, improvements in productivity, generally consequence of automation and new technology. The role of government is to help manage this change in the manufacturing sector. It could equip people to create conditions that enable individuals to meet the challenges. In other words, the government can invest in skills in order to make the most of ‘new’ work systems to raise innovation in every region as well as provide a platform for economic stability with low inflation and steady growth.

The findings of the present research provide a partial answer to the following government policy related question: “what is the impact of foreign investment on the UK labour relations and management systems?”. Although commitment to improving UK’s manufacturing base has improved in terms of an increase in inward investment (some £6-8 billion in 2000) in the automotive sector in general, resources are specifically allotted to regions that are most affected by industrial restructuring and most dependent on the manufacturing industry (Byers, 2001). This means that regions popular for tourism, such as that of Teniki UK, are not given the opportunity to benefit from the activities of industry forum adaptation programmes, ‘best practices’ in production and supply chain management or the activities of Manufacturing Excellence Centres. An increase in the skills level in regions that are less dependent on manufacturing may facilitate the adoption of manufacturing philosophies and techniques in coping with shifting demands in the industry and encourage long-term outlook on sustaining expected quality, cost and delivery outcomes. Government initiatives to increase the skills level of the workforce in the location area of Teniki UK may (in combination with the appropriate managerial strategies) create the environment necessary for the implementation and internalisation of knowledge-driven work systems. For instance, the UK government’s investment in Wales to create a ‘premier’ location, infrastructure and cost base is seen as having yielded some of the following key benefits: commitment to quality, loyal skilled workforce, low unit labour costs and high productivity, vibrant economy geared for significant growth, facilities and infrastructure geared to suit the needs of international businesses, and administration that is supportive and welcoming (Invest.UK, 2000).

The government could be sensitive to the impact of institutional (local as well as national) characteristics on the effective running of knowledge-driven Japanese work systems at the firm level in the UK for the following reasons: first, the manufacturing sector is regarded as vital to the country's ability to compete globally (Byers, 2001) and, second, the manufacturing sector is seen as only running second to the service sector in recent years in terms of output and employment growth (Invest.UK, 2000).

7.4 Limitations of the Present Study

The research design and conceptual framework are not without their limitations. As regards the external validity of findings, the generalisability of results to sectors other than that of the automotive, such as the service sector or other sectors within manufacturing, should be taken with caution. The context-specific perceptions of research participants may not be directly applicable to other sectors. If the nature of the relationship between the Japanese source and the British adopter firm members can distinguish the meanings attached to the use of alternative work systems across sites, then differences can be expected to arise between different manufacturing sectors themselves. However, the focus of this study has been on the process of work systems diffusion rather than a comparison of structural characteristics and their impact on easily codifiable performance outcomes such as profit ratios and efficiency rates. Hence, there are reasons to believe that the salient organisational characteristics identified in the study, particularly the interplay of actors, resources and activities in a network, would have a wide level of applicability (Håkansson, 1986). An attempt has been made to be comprehensive in this research with regard to the levels of investigation and nature of diffused practices. This

broad coverage may at times have been more prevailing than the need to provide an in-depth analysis within a particular level of investigation and/or form of practice. For example, the study has not allowed the researcher to investigate macro-level processes in detail. Rather, the diffusion of work systems is systematically analysed at the local institutional and firm levels within a specific sector. A cross-national comparison of paired companies in Japan and the UK has not been carried out due to the limited scope of the research.¹²³ Hence, it has not been ascertained in great detail how key national social institutions—the state, financial system, public training system, legal system, authority relations and union strength listed in Chapter 2—directly or indirectly influence the local institutional characteristics or the actions of management. Future research is needed to detail the nature of the influence of national institutional characteristics on the diffusion of work systems within the two countries. As this study stands, the impact of national social institutions is only theoretically discussed.

Another limitation of this study is that the range of key characteristics that are identified as having an impact on the diffusion of alternative work systems is not all-encompassing. Future research that is ethnographic in nature can identify other relevant characteristics that can explain the same outcome. Nevertheless, influential characteristics are identified here through a multilevel analysis. Insights into the diffusion of work systems are provided through research that combines micro- and macro-level analyses. Hence, it has been possible to identify organisational- and group-level characteristics that channel and constrain actions of adopters in the putting to practice and accepting knowledge-driven

¹²³ Under a different research design, it would have been possible to conduct a comparative study of the diffusion of work systems in the UK and the Japanese contexts.

work systems. A process dimension to investigating the diffusion of work systems, highlighting the role of managers and workers in the process, has been added to the study. Moreover, possible mutual influences between various local institutional and organisational characteristics have been suggested wherever possible. For instance, the nature of Japanese involvement in the activities of the adopter firms could be linked to the organisational characteristic of company age. In addition, this research lends itself to ‘method of difference’ in comparative case study (Djelic, 1998). For example, firms located in the same industry are selected in such a way that two of the companies (Teniki UK and Rover) are of similar local institutional environment, whilst the remaining company (Nissera UK) has a dissimilar local institutional setting. This research design provides stronger empirical evidence about the influence of local institutional characteristics on the diffusion of Japanese knowledge-driven work systems.

The present study has been limited to analysing the *combined* influence of characteristics at multiple levels. Furthermore, salient characteristics that are likely to influence the degree of implementation alone have not been detailed or distinguished from those that are likely to have an impact on the degree of internalisation. Rather, it has been assumed that higher level of implementation of a particular practice is associated with higher level of internalisation of that practice (see Section 2.2.1.4 in Chapter 2).

It should also be noted that although, at the firm level, salient tacit elements of continuous improvement schemes, such as the level of commitment and trust, have been highlighted in this study, a particular sequence and priorities that can guide the process of

putting alternative work systems to practice is not reported. Instead, the importance of managing the interdependence between tacit (i.e. largely the intangible) and explicit (i.e. largely the tangible) components of continuous improvement schemes in diffusion efforts is highlighted.

7.5 A Future Research Agenda

The outcomes of this study show pointers to the future as follows:

First of all, the impact of nationally distinct institutions on the implementation and internalisation of alternative work systems can be examined in the UK *and* Japan. The research findings that were fed back to the propositions in Chapter 6 revealed that further research is needed in testing the full presence of favourable and unfavourable key institutional, organisational and group characteristics through a direct comparison of diffusion processes in Japan and the UK. Research into more cohesive institutional environments than those investigated here require a cross-national study of firms that are highly reflective of their national business system, rather than research based on MNCs. For example, Ferner (2000) contends that host systems just as much as parent systems are prone to institutional heterogeneity. In other words, national business systems may be characterised by heterogeneous sub-systems, reflected by regional or sectoral differences.

Stronger empirical evidence can be provided with regard to the impact of the institutional variation between the structural and cultural legacies of ‘highly co-ordinated’ systems and those of ‘compartmentalised’ systems by expanding the empirical base to include the

US business system, which is also classified as a 'compartmentalised' system (Whitley, 1999b). Furthermore, the conceptual framework can be expanded to test for the degree of and patterns in learning by source firms. Although there has been a mention of the extent to which Teniki, Nissera and Honda were willing to learn from their affiliate firms, this has not been discussed in detail here. Future research can investigate the diffusion of work systems from UK adopter firms to Japanese source firms. This would be a highly relevant investigation in the light of the current debates on the inefficiency of the Japanese management system. Sectoral differences in patterns of learning can be explored. Functions that are undergoing transformation in highly co-ordinated systems and the impact of this transformation on performance outcomes can be systematically reported. For instance, according to Westney (1993:65), Japanese firms may "try to learn from and adapt some of the adjustments to their organisational patterns not only for their future plants in Europe but for their Japanese plants as well, as the Japanese institutional environment changes over time".¹²⁴ The investigation of the diffusion of organisational practices can be extended to include the impact of these practices on stakeholder relations. For example, in the case of the automotive sector, one can examine how the Japanese cultivate close supplier linkages. Do the Japanese want to reinforce and institutionalise the production organisation of the branch plant? As the Rover-Honda collaboration case in this study shows, diffusion of structural, cultural, control-related and technological practices can include the shift towards enhanced supplier relations, whereby the adopter firm can use suppliers as guest engineers on its site in a partnership-style working relationship. If there is an intention to reinforce the production

¹²⁴ These changes can include shortage of skilled labour, which may necessitate greater employment of women and the move to greater flexibility of rewards (Westney, 1993).

organisation, how is this affected by recent advances in IT, global procurement, increased outsourcing and change to the supply chain that are currently influencing the shape of the automotive sector? How is the development of firm-specific skills influenced by these recent trends?

Secondly, the research findings can be linked to financial indicators so as to demonstrate how the diffusion of knowledge-driven work systems in internationalisation efforts relates to MNCs' performance such as profitability and growth. For example, it became apparent during data collection in the two subsidiary firms that Japanese management was increasingly reluctant to diffuse know-how as the concerned firms displayed weak financial performance and inability to develop their own knowledge base. The link to financial indicators would allow for a stepwise anchoring and weighing of the more qualitative field study findings. A survey could complement qualitative case study research.

Thirdly, further research could be carried out to provide evidence of the impact of institutional variation across sectors within the same and/or different national business systems. This can enhance the external validity of the present research. For example, the financial services sector can be included to increase the empirical base. The research could aim to answer the following question: are practices of firms in the financial sector such as task specialisation, structures for communicating and adding value to information and personnel development programmes more diffusible than the core practices of firms in the automotive manufacture sector? Child and Loveridge (1990:12) demonstrate that

there are variations in choice, dialogue, power and process across banking, health care and retailing sectors in Belgium, Hungary, Italy, Sweden, the United Kingdom and Germany, China, Poland and Yugoslavia “arising from influences specific to the historical, cultural, social and economic context as well as from a degree of indeterminacy in the process of deciding on a given technological innovation”. They argue for multiple paths to introduction of information technology (IT). They show that the process of discussing and negotiating results in different applications of the same microelectronic-based technology in different sectors and countries. The institutional and legal framework for decision-making and values that impinge upon authority, control, solidarity and job definition are shown to be among the key influences.

Similarly, even though the research takes into account the nature of the relationship between the Japanese source and the UK adopter firms in the diffusion of work systems, it does not include different ownership structures such as the variation between state-owned and private firms or unionised and non-unionised firms. The sample of firms investigated can be enlarged depending on the dominance of a particular ownership structure in the institutional setting of interest.

Fourthly, during the analysis of data, it became evident that Japanese expatriates acted as crucial agents in the diffusion of work systems within the firm. Similarly, Sharpe *et al.*'s (2000) findings show that expatriate managers play a central role in creating networks, co-ordinating and mediating expectations and realities or 'translating' understandings between local managers and members at the Japanese headquarters. Future research can

provide greater detail of information on their role in skills and trust formation in partnerships and the implications of their diffusion efforts across international collaborations for building firm-specific competences. Such research could focus, for example, on how and under what circumstances Japanese expatriates translate their experiences in a particular business system to suit the local needs in other institutional environments.

Fifthly, actors' process of translating alternative work systems can be studied in more detail. For example, one can examine how tacit knowledge is converted into explicit knowledge (and vice versa) in the context of an engineering design? As Ferguson (1997:58) contends, "the machines and structures designed by engineers could not be built if sensual knowledge in shop and field did not range far beyond its visual component". In other words, sensual non-verbal knowledge and subtle acts of knowledge, that is the knowledge and skills of workers, is crucial to engineering design. An empirical investigation can provide insights into how knowledge of current practice and products and a growing base of first-hand knowledge and insights gained through critical field observation of engineering projects and industrial plants yield creative designs. Such research on processes conducive to the externalisation of knowledge can be linked to the notion of creativity, and this may vary across nations (e.g. Appleyard, 1996). In the 1950s, this notion became a fad that swept through the US engineering schools. The interest in a creativity craze waned a decade later (Ferguson, 1997). However, the notion of creativity is as important today as it was in the 1950s. The training systems that encourage the use of intuition and non-verbal thought, rather than single-answer

problems, may be more conducive to the production of creative designs.¹²⁵ One can consider the home country effect in one's investigation of such training systems. Research does hint that knowledge creation processes in different sectors such as science, technology and legal may differ, for example, in terms of the reliance on explicit knowledge as in documentation (e.g. Robertson, 1999). Therefore, it would be interesting to look at this further.

Lastly, it was suggested in this study that the firm level could have 'trickling-up' impact on the regional and national levels (Djelic, 1999). This impact could be observed on the nature of industrial relations in the location areas of the adopter firms. As was discussed in Section 7.3.2, the UK institutional environment is in the process of transforming with the growth in Japanese FDI and emulation of Japanese manufacturing processes. The impact of this transformation on public training systems, role of the state, financial system, legal system, authority relations and union strength can be explored through future research. This can be a means of avoiding environmental determinism that can be ascribed to neo-institutional theory.

7.6 Overview

A comparison of the degree to which work systems are implemented and internalised in three affiliate firms of Japanese MNCs in the UK automotive sector has raised contrasting extents in diffusion. The Japanese source company's systems, embedded in the distinct national context of highly co-ordinated systems, are found to be challenged at

¹²⁵ The use of intuition and non-verbal thought refers to the ability to think pictorially, not just mathematically (Ferguson, 1997).

the national and firm levels by a conflicting set of structural and cultural legacies and an emphasis on explicit practices embedded in compartmentalised systems. The Teniki UK case displays a setting in which predominantly unfavourable institutional, organisational and group characteristics contribute to a low degree of implementation and internalisation and an appropriation of Japanese knowledge-driven work systems. The company is embedded in an institutional environment that discourages high levels of commitment to continuous improvement schemes. In contrast, the Nissera UK and Rover-Honda collaboration cases exhibit a setting in which predominantly favourable institutional, organisational and group characteristics contribute to a relatively high degree of implementation and internalisation of work systems. At the national level, similar to Teniki UK, Nissera UK and the Rover-Honda collaboration are embedded in a business system that discourages emphasis on tacit knowledge, team culture, sense of discipline, co-operation and knowledge sharing. Nevertheless, a combination of favourable local institutional, organisational and group characteristics, including supportive managerial initiatives and worker response, has a positive impact on the implementation and internalisation of work systems at Nissera UK and the Rover-Honda collaboration.

This thesis has highlighted the influence of nationally distinct structural and cultural legacies; and local institutional, organisational and group characteristics (including the variation in the emphasis placed on knowledge at the firm level) on the diffusion of work systems in affiliate firms of Japanese MNCs. The results indicate that, despite the trend towards globalisation, there is in effect a diversity or differentiation in the adoption of alternative work systems that are strongly embedded in distinct forms of business systems

by adopter firms that are embedded, comparatively, in weakly institutionalised settings. This issue has implications for management and the government, in particular, due to the association of work systems diffusion with competitive strength. Nevertheless, there is still a large uninvestigated field of research with regard to institutional compatibility in the area of work systems diffusion, especially in demonstrating the impact of the diffusion process on MNC's financial performance. This would provide for more practical solutions to management.

PAGES
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ORIGINAL

- Cole, R. E. (1979). **Work, Mobility and Participation: A Comparative Study of American and Japanese Industry**. Berkeley: University of California Press.
- Coleman, J. S. (1990). **Foundations of Social Theory**. Cambridge, Massachusetts: Belknap Press of Harvard University Press.
- Colombo, M G. (1998). "Some Introductory Reflections". In M. G. Colombo (Ed.), **The Changing Boundaries of the Firm: Explaining Evolving Inter-firm Relations**. London: Routledge, pp. 1-25.
- Cooper, R. and J. Law (1995). "Organisation: Distal and Proximal Views". In S. B. Bacharach (Ed.), **Research in the Sociology of Organisations**, 13. Greenwich, Connecticut: JAI Press, pp. 237-274.
- Crouch, C. and W. Streeck (1997). **Political Economy of Modern Capitalism: Mapping Convergence and Diversity**. London: Sage Publications Ltd.
- Cutcher-Gershenfeld, J., Nitta, M., Barret, B. J., Belhedi, N., Chow, S. S., Inaba, T., Ishino, I., Lin, W., Moore, M. L., Mothersell, W. M., Palthe, J., Ramanand, S., Strolle, M. E. and A. C. Wheaton (1998). **Knowledge-driven Work: Unexpected Lessons from Japanese and United States Work Practices**. Oxford University Press: Japan Business and Economic Series.
- Cutcher-Gershenfeld, J., Nitta, M., Barrett, B. J., Belhedi, N., Bullard, J., Coutchie, C., Inaba, T., Ishino, I., Lee, S., Lin, W., Mothersell, W., Rabine S., Ramanand, S., Strolle, M. and A. Wheaton (1994). "Japanese Team-based Work Systems in North America: Explaining the Diversity", **California Management Review**, 37(1), pp. 42-64.
- Dacin, M. T., Ventresca, M. J. and B. D. Beal (1999). "The Embeddedness of Organisations: Dialogue and Directions", **Journal of Management**, 25(3), pp. 317-356.
- Damanpour, F. (1991). "Organisational Innovation: A Meta-analysis of Effects of Determinants and Moderators", **Academy of Management Journal**, 34(3), pp. 555-590.
- Danford, A. (1997). "Labour Control and Intensification through Teamworking and Kaizen", **Labour Studies Working Papers**, No. 14, Centre for Comparative Labour Studies, University of Warwick, Coventry.
- (1998). "Work Organisation Inside Japanese Firms in South Wales: A Break from Taylorism". In P. Thompson and C. Warhurst (Eds.), **Workplaces of the Future**. Hampshire, Basingstoke: Macmillan Business Press Ltd, pp. 40-64.
- Davenport, T. H. and L. Prusak (1998). **Working Knowledge: How Organisations**

Manage What They Know. Boston, Massachusetts: Harvard Business School Press.

Deakin, S., Lane, C. and F. Wilkinson (2000). "Performance Standards in Supplier Relations: Relational Contracts, Organisational Processes and the Institutional Environment in a Cross-National Perspective". In S. Quack, G. Morgan and R. Whitley (Eds.), **National Capitalisms, Global Competition and Economic Performance.** Amsterdam: John Benjamins Publishing Company, pp. 53-77.

Dedoussis, V. (1995). "Simply a Question of Cultural Barriers? The Search for New Perspectives in the Transfer of Japanese Management Practices", **Journal of Management Studies**, 32(6), pp. 731-745.

Dedoussis, V. and C. Littler (1994). "Understanding the Transfer of Japanese Management Practices: The Australian Case". In T. Elger and C. Smith (Eds.), **Global Japanisation? The Transnational Transformation of the Labour Process.** London: Routledge, pp. 175-195.

Delbridge, R. (1995). "Surviving JIT: Control and Resistance in a Japanese Transplant", **The Journal of Management Studies**, 32(6), pp. 803-817.

— (1998). **Life on the Line in Contemporary Manufacturing: The Workplace Experience of Lean Production and the 'Japanese' Model.** Oxford: Oxford University Press.

Denzin, N. K. and Y. S. Lincoln (1998). **Collecting and Interpreting Qualitative Materials.** London: Sage Publications.

Department of Trade and Industry (1995a). **Investing in the Assisted Areas: A Guide to Regional Selective Assistance.** London: Department of Trade and Industry.

— (1995b). **Use and Exploitation of Intellectual Property by Small firms.** London: Department of Trade and Industry, Inter-departmental Committee on Intellectual Property.

Dickens, P. and M. Savage (1988). "The Japanisation of British Industry? Instances from a High Growth Area", **Industrial Relations Journal**, 19(1), pp. 60-68.

DiMaggio, P. J. and W. W. Powell (1991). "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organisational Fields". In W. W. Powell and P. J. DiMaggio (Eds.), **The New Institutionalism in Organisational Analysis.** Chicago: The University of Chicago Press, pp. 63-82.

Dirks, D., Hemmert, M., Legewie, J., Meyer-Ohle, H. and F. Waldenberger (2000). "The Japanese Employment System in Transition", **International Business Review**, 9(5), pp. 525-553.

- Djelic, M.-L. (1998). **Exporting the American Model: The Post-war Transformation of European Business**. Oxford: Oxford University Press.
- (1999). “From a Typology of Neo-institutional Arguments to their Cross-fertilisation”, **Research Paper**, ESSEC, France.
- Dobbin, F. (1995). “The Origins of Economic Principles: Railway Entrepreneurs and Public Policy in the 19th-Century America”. In W. R. Scott and S. Christensen (Eds.), **The Institutional Construction of Organisations**. Thousand Oaks: Sage Publications, pp. 277-301.
- Dore, R. (1973). **British Factory-Japanese Factory: The Origins of National Diversity in Industrial Relations**. Oxford: University of California Press.
- (1997). “The Distinctiveness of Japan”. In C. Crouch and W. Streeck (Eds.), **Political Economy of Modern Capitalism: Mapping Convergence and Diversity**. London: Sage Publications, pp. 19-32.
- Dore, R. and M. Sako (1997). **How the Japanese Learn to Work**. London: Routledge.
- Doz, Y. and C. K. Prahalad (1984). “Patterns of Strategic Control within Multinational Corporations”, **Journal of International Business Studies**, 15(2), pp. 55-72.
- Dyer, J. H. and K. Nobeoka (2000). “Creating and Managing a High-performance Knowledge-Sharing Network: The Toyota Case”, **Strategic Management Journal**, 21, pp. 345-367.
- Edström, A. and P. Lorange (1984). “Matching Strategy and Human Resources in Multinational Corporations”, **Journal of International Business Studies**, 15, pp. 125-137.
- Eisenhardt, K. M. (1989). “Building Theories from Case Study Research”, **Academy of Management Review**, 32, pp. 543-576.
- Elger, T. and C. Smith (1994). **Global Japanisation? The Transnational Transformation of the Labour Process**. London: Routledge.
- Erramilli, M. K. (1996). “Nationality and Subsidiary Ownership Patterns in Multinational Corporations”, **Journal of International Business Studies**, Second Quarter, 27, pp. 225-248.
- Fairhead, J. (1998). “Paradigm Change and Leveraged Learning during the Rover-Honda Collaboration”, **Creativity and Innovation Management**, 7(2), 93-106.
- Faulkner, D. (1995). **International Strategic Alliances: Co-operating to Compete**. London: McGraw-Hill Book Company.

- Ferguson, E. S. (1997). **Engineering and the Mind's Eye**, fourth edition. Cambridge, Massachusetts: The MIT Press.
- Ferner, A. (2000). "The Embeddedness of US Multinational Companies in the US Business System: Implications for HR/IR", **Occasional Paper Series**, No. 61, Leicester Business School, De Montfort University, Leicester.
- Ferner, A. and J. Quintanilla (1998). "Multinationals, National Business Systems and HRM: The Enduring Influence of National Identity or a Process of 'Anglo-Saxonisation'", **The International Journal of Human Resource Management**, 9(4), pp. 710-731.
- Ferner, A., Edwards, P. and K. Sisson (1995). "Coming Unstuck? In Search of the 'Corporate Glue' in an International Professional Service Firm", **Human Resource Management**, 34(3), pp. 343-361.
- Fletcher, M. (1999). "The Effects of Internal Communication, Leadership and Team Performance on Successful Service Quality Implementation: A South African Perspective", **Team Performance Management**, 5(5), pp. 150-63.
- Flick, U. (1992). "Triangulation Revisited: Strategy of Validation or Alternative?", **Journal for the Theory of Social Behaviour**, 22, pp. 175-198.
- Fligstein, N. (1990). **The Transformation of Corporate Control**. Cambridge, Massachusetts: Harvard University Press.
- Florida, R. and M. Kenney (1991). "Transplanted Organisations: The Transfer of Japanese Industrial Organisation to the U.S.", **American Sociological Review**, 56, pp. 381-398.
- Fransman, M. (1994). "Information, Knowledge, Vision and Theories of the Firm", **Industrial and Corporate Change**, 3, pp. 713-757.
- Fruin, W. M. (1997). **Knowledge Works: Managing Intellectual Capital at Toshiba**. Oxford: Oxford University Press.
- FT.com (2000). "Alliances in the Scramble for Smarter Cars", 2 October, <http://news.ft.com>.
- Fucini, J. J. and S. Fucini (1990). **Working for the Japanese**. New York: Free Press.
- Fukuda, K. J. (1987). "The Practice of Japanese-style Management in South East Asia", **Journal of General Management**, 13, pp. 69-81.
- GEAC (1999). "Modular Supply in the Automotive Industry—The Next Competitive Battle: Part 1", http://just-auto.com/features_detail.asp?art=4, 4 January.

- George, M. and H. Levie (1984). **Japanese Competition and the British Workforce**. London: Centre for Alternative Industrial and Technological Systems (CAITS).
- Gerlach, M. (1992). **Alliance Capitalism**. Berkeley, California: University of California Press.
- Ghoshal, S. and D. E. Westney (1993). **Organisation Theory and the Multinational Corporation**. New York: St. Martin's Press Inc.
- Gill, J. and P. Johnson (1991). **Research Methods for Managers**. London: Paul Chapman Publishing Ltd.
- Gillham, B. (2000). **Case Study Research Methods**. London: Continuum.
- Glaser, B. G. and A. L. Strauss (1967). **The Discovery of Grounded Theory: Strategies for Qualitative Research**. Chicago: Aldine.
- Graham, L. (1993). "Inside a Japanese Transplant: A Critical Perspective". **Work and Occupations**, 20(2), pp. 147-173.
- Grandori, A. and G. Soda (1995). "Inter-firm Networks: Antecedents, Mechanisms and Forms", **Organisation Studies**, 16(2), pp. 183-214.
- Granovetter, M. (1985). "Economic Action and Social Structure: The Problem of Embeddedness", **American Journal of Sociology**, 91(3), pp. 481-510.
- Grant, R. M. (1996). "Towards a Knowledge-based Theory of the Firm ", **Strategic Management Journal**, 17, Winter Special Issue, pp. 109-122.
- Gregory, G. (1982). "The Logic of Japanese Enterprise", **Institute of Comparative Culture Business Series**, Bulletin No. 92. Tokyo: Sophia University.
- Guest, D. (1992). "Human Resource Management in the United Kingdom". In B. Towers (Ed.), **The Handbook of Human Resource Management**. Oxford: Blackwell Publishers, pp. 3-26.
- Håkansson, H. (1986). **Industrial Technological Development: A Network Approach**. London: Croom Helm.
- Hamada, K. and A. Horiuchi (1999). "The Political Economy of the Financial Market". In W. M. Tsutsui (Ed.), **Banking in Japan**, 3. London: Routledge, pp. 30-68.
- Hamilton, G. G. and N. W. Biggart (1988). "Market, Culture and Authority: A Comparative Analysis of Management and Organisation in the Far East", **American Journal of Sociology**, Supplement, 94, pp. S52-S94.

- Hammersley, M. (1992). **What's Wrong with Ethnography? Methodological Explorations**. London: Routledge.
- Hamper, B. (1991). **Rivthead: Tales from the Assembly Line**. New York: Warner Books.
- Harzing, A. W. K. (2000). "An Empirical Test and Extension of the Bartlett and Ghoshal Typology of Multinational Companies", **Journal of International Business Studies**, 31(1), pp. 101-120.
- Hassard, J. (1993). **Sociology and Organisation Theory: Positivism, Paradigms and Postmodernity**. Cambridge: Cambridge University Press.
- Hayek, F. A. (1945). "The Use of Knowledge in Society", **American Economic Review**, 35, pp. 519-530.
- Hedlund, G. (1994). "A Model of Knowledge Management and the N-Form Corporation", **Strategic Management Journal**, 15, pp. 73-91.
- Hedlund, G. and I. Nonaka (1993). "Models of Knowledge Management in the West and Japan". In P. Lorange, B. Chakravarthy, J. Roos and A. Van de Ven (Eds.), **Implementing Strategic Processes: Change, Learning, and Co-operation**. Oxford: Basil Blackwell, pp. 117-144.
- Herrigal, G. (1996). **Industrial Constructions: The Sources of German Industrial Power**. Cambridge: Cambridge University Press.
- Hibino, B. (1997). "The Transmission of Work Systems: A Comparison of US and Japan Auto's Human Resource Management Practices in Mexico". In R. Whitley and P. H. Kristensen (Eds.), **Governance at Work: The Social Regulation of Economic Relations**. Oxford: Oxford University Press, pp. 158-170.
- Hill, S. (1981). **Competition and Control at Work**. Cambridge, Massachusetts: MIT Press.
- Hirao, S. (2001). "Egalitarian Values Stifle Creativity: Researcher", **The Japan Times Online**, <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?nn20010128a3.htm>, 28 January.
- Hirst, P. and J. Zeitlin (1989). **Reversing Industrial Decline? Industrial Structure and Policy in Britain and Her Competitors**. Oxford: Berg Publishers Limited.
- Hislop, D., Newell, S., Scarbrough, H. and J. Swan (1998). "Innovation and Networks: Linking Diffusion and Implementation", **International Journal of Innovation Management**, 1(4), pp. 427-448.

- Ho, S. (1993). "Transplanting Japanese Management Techniques", **Long Range Planning**, 26(4), pp. 81-89.
- Hollingsworth, J. R. and R. Boyer (1997). **Contemporary Capitalism: The Embeddedness of Institutions**. Cambridge: Cambridge University Press.
- Hollingsworth, J. R., Schmitter, P. C. and W. Streeck (1994). **Governing Capitalist Economies: Performance and Control of Economic Sectors**. Oxford: Oxford University Press.
- Huberman, A. M. and M. B. Miles (1998). "Data Management and Analysis Methods". In N. K. Denzin and Y. S. Lincoln (Eds.), **Collecting and Interpreting Qualitative Materials**. Thousand Oaks, California: Sage Publications, pp. 179-210.
- Hull, F. M., Hage, J. and K. Azumi (1985). "R&D Management Strategies: America versus Japan", **IEEE Transactions on Engineering Management**, 32(2), pp. 78-83.
- Hyman, R. (1998). "Trade Union Research and Cross-national Comparison". **Research Paper**, University of Warwick, Coventry.
- Imai, M. (1986). **Kaizen: The Key to Japan's Competitive Success**. New York: McGraw-Hill Publishing Company.
- (1997). **Gemba Kaizen: A Common Sense, Low-cost Approach to Management**. New York: McGraw-Hill.
- Inkpen, A. C. and A. Dinur (1998). "Knowledge Management Processes and International Joint Ventures", **Organisation Science**, 9(4), pp. 452-468.
- Invest in Britain Bureau (1995). **Japanese Manufacturing Companies in the UK**, 3 October. London: Department of Trade and Industry Publication.
- (1999). **Invest in Britain**. London: Department of Trade and Industry.
- Invest.UK (2000). **Investment Bulletin**, Summer, <http://www.invest.uk.com>.
- Iwata, R. (1982). **Japanese-style Management: Its Foundations and Prospects**. Tokyo: Asian Productivity Organisation.
- Jaeger, A. M. (1983). "The Transfer of Organisational Culture Overseas: An Approach to Control in the Multinational Corporation", **Journal of International Business Studies**, 15, pp. 91-114.
- Jeremy, D. J. (1992). **The Transfer of International Technology: Europe, Japan and the USA in the Twentieth Century**. Aldershot: Elgar.

- Kamata, S. (1982). **Japan in the Passing Lane: An Insider's Account of Life in a Japanese Auto Factory**. New York: Pantheon Books.
- Karnøe, P. (1995). "Institutional Interpretations and Explanations of Differences in American and Danish Approaches to Innovation". In W. R. Scott and S. Christensen (Eds.), **The Institutional Construction of Organisations**. Thousand Oaks, California: Sage Publications Inc., pp. 243-276.
- Karnøe, P. and C. Nygaard (1999). "Bringing Social Action and Situated Rationality Back In", **International Studies of Management and Organisation**, 29(2), pp. 78-93.
- Kedia, B. and R. Bhagat (1988). "Cultural Constraints on Transfer of Technology Across Nations: Implications for Research in International and Comparative Management", **Academy of Management Review**, 13(4), pp. 559-571.
- Kenney, M. and R. Florida (1993). **Beyond Mass Production: The Japanese System and Its Transfer to the US**. New York: Oxford University Press.
- (1995). "The Transfer of Japanese Management Styles in Two US Transplant Industries: Autos and Electronics", **Journal of Management Studies**, 32(6), pp. 789-802.
- Kester, W. C. (1996). "American and Japanese Corporate Governance: Convergence to Best Practice?". In S. Berger and R. Dore (Eds.), **National Diversity and Global Capitalism**. Ithaca, New York: Cornell University Press, pp. 107-137.
- Kogut, B. and U. Zander (1992). "Knowledge of the Firm, Combinative Capabilities and the Replication of Technology", **Organisation Science**, 3(3), pp. 383-397.
- (1993). "Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation", **Journal of International Business Studies**, 24, pp. 625-645.
- Kostova, T. (1999). "Transnational Transfer of Strategic Organisational Practices: A Contextual Perspective", **Academy of Management Review**, 24(2), pp. 308-324.
- Kristensen, P. H. (1996). "On the Constitution of Economic Actors in Denmark: Interacting Skill Containers and Project Coordinators". In R. Whitley and P. H. Kristensen (Eds.), **The Changing European Firm: Limits to Convergence**. London: Routledge, pp. 118-158.
- Kubo, I. and A. Saka (2002). "An Inquiry into the Motivations of Knowledge Workers in the Japanese Financial Industry", **Journal of Knowledge Management**, forthcoming.
- Kubo, I., Saka, A. and S. L. Pan (2001), "Behind the Scenes of Knowledge Sharing in a

- Japanese Bank", **Human Resource Development International**, 4(4), pp. 465-485.
- Lahti, R. K. and M. M. Beyerlein (2000). "Knowledge Transfer and Management Consulting: A Look at the Firm", **Business Horizons**, 43(1), pp. 65-74.
- Lam, A. (1998). "Tacit Knowledge, Organisational Learning and Innovation: A Societal Perspective", **DRUID Working Paper**, No. 98-22, Danish Research Unit for Industrial Dynamics, Aalborg.
- (2000). "Tacit Knowledge, Organisational Learning and Societal Institutions: An Integrated Framework", **Organisation Studies**, 21(3), pp. 488-513.
- Lane, C. (1996). "The Social Constitution of Supplier Relations in Britain and Germany: An Institutional Analysis". In R. Whitley and P. H. Kristensen (Eds.), **The Changing European Firm: Limits to Convergence**. London: Routledge, pp. 271-304.
- Lane, C. and R. Bachman (1997). "Co-operation in Inter-firm Relations in Britain and Germany: The Role of Social Institutions", **British Journal of Sociology**, 48(2), pp. 226-254.
- Lanzara, G. F. and G. Patriotta (2000). Technology and the Courtroom: An Inquiry into Knowledge Making. Paper presented at the **Knowledge Management: Concepts and Controversies Conference**, 10-11 February, University of Warwick, Coventry, U.K.
- Lave, J. (1993). "The Practice of Learning". In S. Chaiklin and J. Lave (Eds.). **Understanding Practice: Perspectives on Activity and Context**. Cambridge: Cambridge University Press, pp. 3-32.
- Lave, J. and E. Wenger (1991). **Situated Learning: Legitimate Peripheral Participation**. Cambridge: Cambridge University Press.
- Lazonick, W. (1998). "Organisational Learning and International Competition". In J. Michie and J. Grieve Smith (Eds.), **Globalisation, Growth and Governance**. Oxford: Oxford University Press, pp. 204-238.
- Leonard-Barton, D. (1995). **Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation**. Boston, Massachusetts: Harvard Business School Press.
- Lewchuk, W. (1992). "Fordist Technology and Britain: The Diffusion of Labour Speed-up". In D. J. Jeremy (Ed.), **The Transfer of International Technology: Europe, Japan and the USA in the Twentieth Century**. Aldershot, Hants: Edward Elgar, pp. 7-32.
- Liker, J. K., Fruin, W. M. and P. S. Adler (1999). **Remade in America: Transplanting**

and Transforming Japanese Management Systems. New York: Oxford University Press.

Lillrank, P. (1995). "The Transfer of Management Innovations from Japan", **Organisation Studies**, 16(6), pp. 971-989.

Lincoln, J. (1990). "Japanese Organisation and Organisation Theory". In B. Staw and L. Cummings (Eds.), **Research in Organisational Behaviour**, 14. Greenwich, Connecticut: JAI Press, pp. 255-294.

Lincoln, J. R. and A. L. Kalleberg (1985). "Work Organisation and Workforce Commitment: A Study of Plants and Employees in the US and Japan", **American Sociological Review**, 50, pp. 738-760.

— (1990). **Culture, Control and Commitment: A Study of Work Organisation and Work Attitudes in the United States and Japan.** Cambridge, New York: Cambridge University Press.

Littler, C. (1982). **The Development of the Labour Process in Capitalist Societies.** London: Heineman.

Loo, R. (1996). "Training in Project Management: A Powerful Tool for Improving Individual and Team Performance", **Team Performance Management: An International Journal**, 2(3), pp. 6-14.

Loveridge, R. (1987). "Social Accommodations and Technological Transformations—The Case of Gender". In G. Lee and R. Loveridge (Eds.), **The Manufacture of Disadvantage: Stigma and Social Change.** Milton Keynes: Open University Press, pp. 176-197.

— (1996). "Putting Nationalism Back into National Business Systems: The Ideological and Institutional Context of Global Competition", **Research Paper**, Aston University, Birmingham, U.K.

— (1998). Review of the Changing European Firm—Limits to Convergence, by R. Whitley and P. H. Kristensen (Eds.), **Organisation Studies**, 19(6), pp. 1049-1053.

Loveridge, R. and F. Mueller (2000). "Flagships, Flotillas and Corvettes: Corporate Actors, National Business Systems and Sectoral Dynamics in Telecommunications". In S. Quack, G. Morgan and R. Whitley (Eds.), **National Capitalisms, Global Competition and Economic Performance.** Amsterdam: John Benjamins Publishing Company, pp. 213-235.

Lynskey, M. J. (1999). "The Transfer of Resources and Competencies for Developing Technological Capabilities—The Case of Fujitsu-ICL", **Technology Analysis and Strategic Management**, 11(3), pp. 317-336.

- MacDuffie, J. (1995). "Human Resource Bundles and Manufacturing Performance: Organisational Logic and Flexible Production Systems in the World Auto Industry", **Industrial and Labour Relations Review**, 48(2), pp. 197-221.
- Mair, A. (1998a). "From British Leyland Motor Corporation to Rover Group: The Search for a Viable British Model". In M. Freyssenet, A. Mair, K. Shimizu and G. Volpato (Eds.), **One Best Way? Trajectories and Industrial Models of the World's Automobile Producers**. Oxford: Oxford University Press, pp. 395-417.
- (1998b). "Internationalisation at Honda: Transfer and Adaptation of Management Systems", **Employee Relations**, 20(3), pp. 285-302.
- Makino, S. and A. Delios (1996). "Local Knowledge Transfer and Performance: Implications for Alliance Formation in Asia", **Journal of International Business Studies**, 27(5), pp. 905-927.
- March, J. G. and J. P. Olsen (1984). "The New Institutionalism: Organisational Factors in Political Life", **American Political Science Review**, 78(3), pp. 734-749.
- Marini, M. M. (1992). "The Role of Models of Purposive Action in Sociology". In J. S. Coleman and T. J. Fararo (Eds.), **Rational Choice Theory: Advocacy and Critique**. Newbury Park, California: Sage Publications Inc., pp. 21-48.
- Marshall, C. and G. B. Rossman (1995). **Designing Qualitative Research**, second edition. Thousand Oaks, California: Sage Publications.
- Marshall, N. and J. Sapsed (2000). "The Limits of Disembodied Knowledge: Challenges of Inter-project Learning in the Production of Complex Products and Systems". Paper presented at the **Knowledge Management: Concepts and Controversies Conference**, 10-11 February, University of Warwick, Coventry, U.K.
- Martinez, J. I. and J. C. Jarillo (1989). "The Evolution of Research on Co-ordination Mechanisms in Multinational Corporations", **Journal of International Business Studies**, 20(3), pp. 489-514.
- Marton, K. (1986). **Multinationals, Technology, and Industrialisation**. Lexington, Massachusetts: Heath.
- Mathieu, J. and D. Zajac (1990). "A Review and Meta-analysis of the Antecedents, Correlates and Consequences of Organisational Commitment", **Psychological Bulletin**, 108, pp. 171-194.
- Maurice, M., Sellier, F. and J.-J. Silvestre (1986). **The Social Foundations of Industrial Power: A Comparison of France and Germany**, translated by Arthur Goldhammer. Cambridge, Massachusetts: MIT Press.

- Maurice, M., Sorge, A. and M. Warner (1980). "Societal Differences in Organising Manufacturing Units: A Comparison of France, West Germany, and Great Britain", **Organisation Studies**, 1(1), pp. 59-86.
- McKenna, E. (1994). **Business Psychology and Organisational Behaviour: A Students' Handbook**. Hove, East Sussex: Psychology Press.
- McMillan, C. J. (1996). **The Japanese Industrial System**, third edition. Berlin: Walter de Gruyter.
- Merriam, S. (1988). **Case Study Research in Education: A Qualitative Approach**. San Francisco: Jossey-Bass.
- Meyer, J. W. and B. Rowan (1977). "Institutionalised Organisations: Formal Structure as Myth and Ceremony", **American Journal of Sociology**, 83(2), pp. 340-363.
- Miles, M. B. and A. M. Huberman (1994). **Qualitative Data analysis: A Sourcebook of New Methods**. Newbury Park, California: Sage Publications.
- Miles, R. E. and C. C. Snow (1978). **Organisational Structure, Strategy and Process**. New York: McGraw-Hill.
- Morgan, G. (1986). **Images of Organisation**. Thousand Oaks, California: Sage Publications.
- Morgan, G., Kelly, W., Sharpe, D. R. and R. Whitley (2000a). "Control in Global Corporations". Paper presented at the **Labour Process Conference**, April, University of Strathclyde, U.K.
- (2000b). "Multinationals as Organisations". Paper presented at the **16th EGOS Colloquium**, 2-4 July, Helsinki School of Economics and Business Administration, Helsinki, Finland.
- Morris, J. (1988). "The Who, Why and Where of Japanese Manufacturing Investment in the UK", **Industrial Relations Journal**, 19(1), pp. 31-40.
- Morris, J. and B. Wilkinson (1995). "The Transfer of Japanese Management to Alien Institutional Environment", **Journal of Management Studies**, Special Issue, 32(36), pp. 719-730.
- Mowery, D., Oxley, J. and B. Silverman (1996). "Strategic Alliances and Inter-firm Knowledge Transfer", **Strategic Management Journal**, 17, Winter Special Issue, pp. 77-91.
- Mueller, F. and R. Loveridge (1997). "Institutional, Sectoral and Corporate Dynamics in the Creation of Global Supply Chains". In R. Whitley and P. H. Kristensen (Eds.),

Governance at Work: The Social Regulation of Economic Relations. Oxford: Oxford University Press, pp. 140-157.

Munakata, M. (1998). "The End of the 'Mass Production System' and Changes in Work Practices". In H. Harukiyo and G. D. Hook (Eds.), **Japanese Business Management: Restructuring for Low Growth and Globalisation.** London: Routledge, pp. 181-194.

Murata, K. and A. Harrison (1991). **How to Make Japanese Management Methods Work in the West.** Aldershot, Hants: Gower Publishing.

Negandhi, A. and M. Welge (1984). **Beyond Theory Z: Global Rationalisation Strategies of American, German and Japanese Multinational Companies.** Greenwich, Connecticut: JAI Press.

Nelson, R. R. and S. G. Winter (1982). **An Evolutionary Theory of Economic Change.** Cambridge, Massachusetts: Harvard University Press.

Newell, S. and P. Clark (1990). "The Importance of Extra-organisational Network in the Diffusion and Appropriation of New Technologies", **Knowledge: Creation, Diffusion, Utilisation**, 12, pp. 199-212.

News and Notes (1999). "Japanese Manufacturers in Europe", **Euro-Japanese Journal**, 5(2), pp. 58-63.

Nonaka, I. and H. Takeuchi (1995). **The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation.** New York: Oxford University Press.

Nonaka, I. and J. K. Johansson (1985). "Japanese Management: What about the 'Hard' Skills?", **Academy of Management Review**, 10(2), pp. 181-191.

Nonaka, I., Toyama, R. and N. Konno (2001). "Knowledge, Creation and Leadership". In I. Nonaka and D. J. Teece (Eds.), **Managing Industrial Knowledge: Creation, Transfer and Utilisation.** London: Sage Publications, pp. 13-43.

Norton, J. A. and F. M. Bass (1987). "A Diffusion Theory Model of Adoption and Substitution for Successive Generations of High-Technology Products", **Management Science**, 33, pp. 1069-1086.

Odaka, K. (1986). **Japanese Management: A Forward-looking Analysis.** Tokyo: Asian Productivity Organisation.

Office for National Statistics (1999). Unpublished Data on Level of Industrial Dispute in the West Midlands.

- Ohtani, N., Duke, S. and S. Ohtani (1997). **Japanese Design and Development**. Aldershot: Gower Publishing Limited.
- Oliver, N. and B. Wilkinson, (1992). **The Japanisation of British Industry: New Developments in the 1990s**. Oxford: Blackwell Publishers.
- Oliver, N., Delbridge, R., Jones, D. and J. Lowe (1994). "World Class Manufacturing: Further Evidence in the Lean Production Debate", **British Journal of Management**, 5, pp. 53-63.
- Orrù, M. (1997). "Institutional Co-operation in Japanese and German Capitalism". In M. Orrù, N. W. Biggart and G. G. Hamilton (Eds.), **The Economic Organisation of East Asian Capitalism**. Thousand Oaks, California: Sage Publications, pp. 311-339.
- Orrù, M., Biggart, N. W. and G. G. Hamilton (1991). "Organisational Isomorphism in East Asia". In W. W. Powell and P. J. DiMaggio (Eds.), **The New Institutionalism in Organisational Analysis**. Chicago: The University of Chicago Press, pp. 361-389.
- Pascale, R. T. and A. G. Athos (1986). **The Art of Japanese Management**. London: Penguin Books Ltd.
- Patel, P. and K. Pavitt (1997). "The Technological Competencies of the World's Largest Firms: Complex and Path-dependent, but not Much Variety", **Research Policy**, 26, pp. 141-156.
- Pavitt, K. (1984). "Sectoral Patterns of Technological Change: Towards a Taxonomy and a Theory", **Research Policy**, 13, pp. 343-373.
- (1991). "Key Characteristics of the Large Innovating Firm", **British Journal of Management**, 2(1), pp. 41-50.
- Penrose, E. T. (1959). **The Theory of the Growth of the Firm**. Oxford: Basil Blackwell.
- Platt, J. (1988). "What Can Case Studies Do?". In R. G. Burgess (Ed.), **Studies in Qualitative Methodology: A Research Annual, Conducting Qualitative Research**, 1. London: JAI Press, pp. 1-23.
- Polanyi, M. (1966). **The Tacit Dimension**. London: Routledge and Kegan Paul.
- Porter, M. E. (1990). **The Competitive Advantage of Nations**. New York: Free Press.
- Porter, M. E., Takeuchi, H. and M. Sakakibara (2000). **Can Japan Compete?** Basingstoke, Hampshire: Macmillan Press Ltd.
- Powell, W. W. (1991). "Expanding the Scope of Institutional Analysis". In W. W. Powell and P. J. DiMaggio (Eds.), **The New Institutionalism in Organisational Analysis**.

- Chicago: The University of Chicago Press, pp. 183-203.
- Prahalad, C. and G. Hamel (1990). "The Core Competence of the Corporation", **Harvard Business Review**, (May-June), pp. 79-91.
- Prusak, L. (1997). **Knowledge in Organisations**. Boston: Butterworth-Heinemann.
- Pucik, V. (1996). "Strategic Alliances, Organisational Learning and Competitive Advantage: The HRM Agenda". In P. S. Myers (Ed.), **Knowledge Management and Organisational Design**. Boston: Butterworth-Heinemann, pp. 151-165.
- Raymond, M. (1996). **Research Made Simple: A Handbook for Social Workers**. Thousand Oaks: Sage Publications Inc..
- Redditch Borough Council (1998). **Economic Development Profile 1998/99**. Redditch: Development Plans and Economic Development Services.
- Reitsperger, W. (1986). "British Employees: Responding to Japanese Philosophies", **Journal of Management Studies**, 23(5), pp. 563-586.
- Richardson, G. B. (1960), **Information and Investment: A Study in the Working of the Competitive Economy**. Oxford: Oxford University Press.
- Richter, F-J. and K. Vettel (1995). "Successful Joint Ventures in Japan: Transferring Knowledge through Organisational Learning", **Long Range Planning**, 28(3), pp. 37-45.
- Robertson, M. (1999). **Sustaining Knowledge Creation within Knowledge Intensive Firms**. Unpublished PhD Dissertation, University of Warwick, U.K.
- Robertson, M., Swan, J. and S. Newell (1996). "The Role of Networks in the Diffusion of Technological Innovation", **Journal of Management Studies**, 33(3), pp. 333-359.
- Rogers, E. M. (1983). **Diffusion of Innovations**, third edition. New York: Free Press.
- Rosenzweig, P. M. and N. Nohria (1994). "Influences on Human Resource Management Practices in Multinational Corporations", **Journal of International Business Studies**, Second Quarter, pp. 229-251.
- Rowlinson, M. (1997). **Organisations and Institutions**. Basingstoke, Hampshire: Macmillan Press Ltd.
- Sako, M. (1992). **Prices, Quality and Trust: Inter-firm Relations in Britain and Japan**. Cambridge: Cambridge University Press.
- (1997). "Introduction: Forces for Homogeneity and Diversity in the Japanese Industrial Relations System". In M. Sako and H. Sato (Eds.), **Japanese Labour and**

- Management in Transition: Diversity, Flexibility and Participation.** London: Routledge, pp. 1-24.
- Sako, M. and H. Sato (1997). **Japanese Labour and Management in Transition.** London: Routledge.
- Salisbury Economic Development and Tourism Unit (1998). **Information Pack on Socio-economic Facts on Salisbury and South Wiltshire.** Salisbury: Salisbury District Council.
- Scarbrough, H. (1995). "Blackboxes, Hostages and Prisoners", **Organisation Studies**, 16(6), pp. 991-1019.
- Scarbrough, H. and J. Swan (1999). **Case Studies in Knowledge Management.** London: Institute of Personnel and Development.
- Scarbrough, H. and M. Corbett (1992). **Technology and Organisation.** London: Routledge.
- Scarbrough, H. and M. Terry (1998). "Forget Japan: The Very British Response to Lean Production", **Employee Relations**, 20(3), pp. 224-236.
- Scarbrough, H., Swan, J. A. and J. Preston (1998). **Knowledge Management and the Learning Organisation: The IPD Report.** London: Institute of Personnel Development.
- Schatzman, L. and A. L. Strauss (1973). **Field Research: Strategies for a Natural Sociology.** Englewood Cliffs, New Jersey: Prentice Hall.
- Schonberger, R. J. (1982). **Japanese Manufacturing Techniques: Nine Hidden Lessons in Simplicity.** New York: The Free Press.
- Schumpeter, J. (1942). **Capitalism, Socialism and Democracy.** New York: Harper and Brothers.
- Senker, J. (1995a). "Networks and Tacit Knowledge in Innovation", **Economies et Societies, Serie Dynamique Technologique et Organisation**, 2(9), pp. 99-118.
- (1995b). "Tacit Knowledge and Models of Innovation", **Industrial and Corporate Change**, 4(2), pp. 425-447.
- Sewell, G. and B. Wilkinson (1992). "'Someone to Watch Over Me': Surveillance, Discipline and the Just-In-Time Labour Process", **Sociology**, 26(2), pp. 271-289.
- Sharpe, D. R. (1997). "Compromise Solutions: A Japanese Multinational Comes to the UK". In R. Whitley and P. H. Kristensen (Eds.), **Governance at Work: The Social**

- Regulation of Economic Relations.** Oxford: Oxford University Press, pp. 171-189.
- (1998a). **Shop Floor Practices under Changing Forms of Managerial Control: A Comparative Ethnographic Study.** Unpublished PhD Dissertation, University of Manchester, U.K.
 - (1998b). “Working with Organisational Complexity and Diversity: An Empirical Study of the Formation and Evolution of a European-Japanese International Joint Venture”. In G. Hooley, R. Loveridge and D. Wilson (Eds.), **Internationalisation: Process, Context and Markets.** Basingstoke, Hampshire: Macmillan Press Ltd., pp. 78-95.
 - (1999). “Globalisation and Change: An In-depth Case Study of Processes of Organisational Continuity and Change within a Japanese Multinational in the UK”. Paper presented at the **European Summer Research Institutes (ESRI) Workshop on Comparative Study of Economic Organisation,** Copenhagen Business School, Denmark, 24-28 September.
 - (2001). “Globalisation and Change: Organisational Continuity and Change within a Japanese Multinational in the UK”. In G. Morgan, P. H. Kristensen and R. Whitley (Eds.), **The Multinational Firm: Organising Across Institutional and National Divides.** Oxford: Oxford University Press, pp. 196-221.
- Sharpe, D. R., Kelly, W., Morgan, G. and R. Whitley (2000). “The Global Manager? Japanese Expatriate Managers—Managing over Distance and Time”. Paper Presented at the **Academy of Management Conference,** 4-9 August, Toronto, Canada.
- Sierra, M. C. de la (1995). **Managing Global Alliances: Key Steps for Successful Collaboration.** Workingham: Addison-Wesley Publishing Company.
- Sivula, P., Bosch, F. A. J. van den and T. Elfring (1997). “Competence Building by Incorporating Clients into the Development of a Business Service Firm’s Knowledge Base”. In R. Sanchez and A. Heene (Eds.), **Strategic Learning and Knowledge Management.** Chichester: John Wiley & Sons Ltd., pp. 121-137.
- Skorstad, E. (1994). “Lean Production, Conditions of Work and Worker Commitment”, **Economic and Industrial Democracy,** 15, pp. 429-455.
- Slappendel, C. (1996). “Perspectives on Innovation in Organisations”, **Organisation Studies,** 17(1), pp. 107-129.
- Smith, C. and T. Elger (1998). “Greenfields and ‘Wildebeests’: Management Strategies and Labour Turnover in Japanese Firms in Telford”, **Employee Relations,** 20(3), pp. 271-284.
- Sorge, A. (1989). “An Essay on Technical Change: Its Dimensions and Social and

- Strategic Context", **Organisation Studies**, 10(1), pp. 23-44.
- (1991). "Strategic Fit and the Societal Effect: Interpreting Cross-national Comparisons of Technology, Organisation and Human Resources", **Organisation Studies**, 12(2), pp. 161-190.
- (1996). "Societal Effects in Cross-national Organisation Studies: Conceptualising Diversity in Actors and Systems". In R. Whitley and P. H. Kristensen (Eds.), **The Changing European Firm**. London: Routledge, pp. 67-86.
- Spender, J. C. (1996). "Making Knowledge the Basis of a Dynamic Theory of the Firm", **Strategic Management Journal**, 16, Special Issue, pp. 45-62.
- Stewart, P. (1998). "Out of Chaos Comes Order: From Japanisation to Lean Production: A Critical Commentary", **Employee Relations**, 20(3), pp. 213-223.
- Storey, J. and A. Harrison (1999). "Coping with World Class Manufacturing", **Work, Employment and Society**, 13(4), pp. 643-664.
- Streeck, W. (1996). "Lean Production in the German Automobile Industry: A Test Case for Convergence Theory". In S. Berger and R. Dore (Eds.), **National Diversity and Global Capitalism**. New York: Cornell University Press, pp. 138-170.
- Stringer, E. T. (1996). **Action Research: A Handbook for Practitioners**. Thousand Oaks: Sage Publications.
- Sullivan, J., Peterson, R. B., Kameda, N. and J. Shimada (1981). "The Relationship between Conflict Resolution Approaches and Trust: A Cross-cultural Study", **Academy of Management Journal**, 24(4), pp. 803-815.
- Suzuki, Y. (1980). **Money and Banking in Contemporary Japan**. New Haven: Yale University Press.
- Swan, J. A. (1999). "Introduction". In H. Scarbrough and J. Swan (Eds.), **Case Studies in Knowledge Management**. London: Institute of Personnel and Development, pp. 1-12.
- Swan, J. A. and P. Clark (1992). "Organisational Decision-making in the Appropriation of Technological Innovation: Cognitive and Political Dimensions", **European Work and Organisational Psychologist**, 2(2), pp. 103-127.
- Swan, J. A., Newell, S. and M. Robertson (1999). "Central Agencies in the Diffusion and Design of Technology: A Comparison of the UK and Sweden", **Organisation Studies**, 20(6), pp. 905-931.
- Szulanski, G. (1996). "Exploring Internal Stickiness: Impediments to the Transfer of Best

- Practice within the Firm”, **Strategic Management Journal**, 17, Winter Special Issue, pp. 27-43.
- Taggart, J. (1998). “Locating International Pharmaceutical R&D Subsidiaries: Between-Countries and Within-Countries Determinants”. In G. Hooley, R. Loveridge and D. Wilson (Eds.), **Internationalisation: Process, Context and Markets**. Basingstoke, Hampshire: Macmillan Press Ltd., pp. 56-77.
- Takeuchi, H. (1981). “Productivity: Learning from the Japanese”, **California Management Review**, 4, pp. 5-19.
- (1998). “Beyond Knowledge Management, Lessons from Japan”, <http://203.32.10.69/lessonsJapan.htm>, 10 June.
- Tampoe, M. (1993). “Motivating Knowledge Workers—The Challenge for the 1990s”, **Long Range Planning**, 26(3), pp. 49-55.
- Taylor, B., Elger, T. and P. Fairbrother (1994). “Transplants and Emulators: The Fate of the Japanese Model in British Electronics”. In T. Elger and C. Smith (Eds.), **Global Japanisation? The Transnational Transformation of the Labour Process**. London: Routledge, pp. 196-225.
- Teece, D. and G. Pisano (1994). “The Dynamic Capabilities of Firms: An Introduction”, **Industrial and Corporate Change**, 3, pp. 537-556.
- Thomas, R. J. (1994). **What Machines Can’t Do: Politics and Technology in the Industrial Enterprise**. Berkeley: University of California Press.
- Tolbert, P. S. and L. G. Zucker (1983). “Institutional Sources of Change in the Formal Structure of Organisations: The Diffusion of Civil Service Reform, 1880-1935”, **Administrative Science Quarterly**, 28(1), pp. 22-39.
- Tolich, M., Kenney, M. and N. Biggart (1999). “Managing the Managers: Japanese Management Strategies in the USA”, **Journal of Management Studies**, 36(5), pp. 587-607.
- Tsang, E. W. K. (1999). “The Knowledge Transfer and Learning Aspects of International HRM: An Empirical Study of Singapore MNCs”, **International Business Review**, 8, pp. 591-609.
- Tsoukas, H. (1996). “The Firm as a Distributed Knowledge System: A Constructionist Approach”, **Strategic Management Journal**, 17, Winter Special Issue, pp. 11-25.
- Turnbull, P. and R. Delbridge (1994). “Making Sense of Japanisation: A Review of the British Experience”, **International Journal of Employment Studies**, 2(2), pp. 343-365.

- Tushman, M. L. and T. J. Scanlan (1981). "Boundary Spanning Individuals: Their Role in Information Transfer and Their Antecedents", **Academy of Management Journal**, 24, pp. 289-305.
- Warner, M. (1994). "Japanese Culture, Western Management: Taylorism and Human Resources in Japan", **Organisation Studies**, 15(4), pp. 509-533.
- Westbrook, R. (1995). "Action Research: A New Paradigm for Research in Production and Operations Management", **International Journal of Operations and Production Management**, 15(12), pp. 6-20.
- Westney, D. E. (1993). "Institutionalisation Theory and the Multinational Corporation". In S. Ghoshal and D. E. Westney (Eds.), **Organisation Theory and the Multinational Corporation**. New York: St. Martin's Press, pp. 53-76.
- (1999). "Organisation Theory Perspectives on the Cross-Border Transfer of Organisational Patterns". In J. K. Liker, W. M. Fruin and P. S. Adler (Eds.), **Remade in America: Transplanting and Transforming Japanese Management Systems**. New York: Oxford University Press, pp. 385-408.
- White, M. R. and M. Trevor (1983). **Under Japanese Management**. London: Heinemann.
- Whitley, R. (1992). **Business Systems in East Asia: Firms, Markets and Societies**. London: Sage Publication.
- (1996). "The Social Construction of Economic Actors: Institutions and Types of Firm in Europe and Other Market Economies". In R. D. Whitley and P. H. Kristensen (Eds.), **The Changing European Firm: Limits to Convergence**. London: Routledge, pp. 39-66.
- (1997). "The Social Regulation of Work Systems: Institutions, Interest Groups and Varieties of Work Organisation in Capitalist Societies". In R. Whitley and P. H. Kristensen (Eds.), **Governance at Work: The Social Regulation of Economic Relations**. Oxford: Oxford University Press, pp. 227-260.
- (1999a). "Competing Logics and Units of Analysis in the Comparative Study of Economic Organisation: The Comparative-Business-Systems Framework in Perspective", **International Studies of Management and Organisation**, 29(2), pp. 113-126.
- (1999b). **Divergent Capitalisms: The Social Structuring and Change of Business Systems**. Oxford: Oxford University Press.
- (1999c). "How and Why are International Firms Different? The Consequences of Cross-border Managerial Co-ordination for Firm Characteristics and Behaviour".

Paper presented at the **15th EGOS Colloquium**, 4-6 July, University of Warwick, Coventry, U.K.

- (2000a). “Changing Regulatory Regimes and the Management of International Business Transactions”. Paper presented at the **ESRI Workshop on Forms of Transnational Governance and Paths of Economic Development**, 16-19 September, Lisbon, Portugal.
- (2000b). “The Institutional Structuring of Innovation Strategies: Business Systems, Firm Types and Patterns of Technical Change in Different Market Economies”, **Organisation Studies**, Special Issue on The Institutional Dynamics of Innovation Systems, 21(5), pp. 855-886.

Williams, K., Haslam, C., Adcroft, A. and S. Johal (1992). “Against Lean Production”, **Economy and Society**, August, pp. 321-354.

Williamson, O. E. (1985). **The Economic Institutions of Capitalism: Markets, Hierarchies and Relational Contracting**. New York: The Free Press.

Wilms, W. W., Alan, J. H. and D. M. Zell (1994). “Cultural Transformation at NUMMI”, **Sloan Management Review**, 36(1), pp. 99-113.

Winter, S. G. (1988). “On Coase, Competence and the Corporation”, **Journal of Law, Economics and Organisation**, 4, pp. 163-180.

Wolfe, R. A. (1994). “Organisational Innovation: Review, Critique and Suggested Research Directions”, **Journal of Management Studies**, 31, pp. 405-431.

Womack, J. P., Jones, D. T. and D. Roos (1990). **The Machine that Changed the World**. New York: Macmillan.

Worsley, P. (1982). **Marx and Marxism**. Chichester: Ellis Horwood Ltd.

Yin, R. K. (1994). **Case Study Research: Design and Methods**, second edition. Thousand Oaks, California: Sage Publications.

Yoshimura, N. and P. Anderson (1997). **Inside the Kaisha: Demystifying Japanese Business Behaviour**. Boston, Massachusetts: Harvard Business School Press.

Yoshino, M. (1968). **Japan's Managerial System: Tradition and Innovation**. Cambridge, Massachusetts: MIT Press.

Zuboff, S. (1996). “The Abstraction of Industrial Work”. In P. S. Myers (Ed.), **Knowledge Management and Organisational Design**. Boston: Butterworth-Heinemann, pp. 197-207.

Zysman, J. (1983). **Governments, Markets and Growth**. Ithaca, New York: Cornell University.

Appendix I Overview of Organisations Involved in the Explorative Stage of the Research

Explorative study

	Organisation	Form of ownership	Participants	Interview date
1	Ikeda Hoover Ltd. (manufacturer of car seats)	<i>Joint venture</i> Ikeda Bussan, Japan (51%) Johnson Controls, USA (49%)	(British) General Project Manager	12 June 1998
2	Hoya Lens UK Ltd. (manufacturer of optical products, vision care)	<i>Subsidiary</i> of Hoya Holdings N.V. (Netherlands) which is part of the Hoya Corporation, Japan	(British) MD	22 June 1998
3	Telecom Modus (telecommunications)	<i>Joint venture</i> ERA Technology Ltd., UK (40%) NEC, Japan (60%)	(British) MD of ERA Technology Ltd.	17 August 1998
4	Teniki UK Ltd. (carbon canisters, air intake systems)	<i>Subsidiary</i> of Teniki Ltd., Japan	(British) MD	21 August 1998
5	Unipart Yachiyo Technology Ltd. (manufacturer of pressed steel body components and sun roof assemblies)	<i>Joint venture</i> Unipart Group of Companies (UGC), UK (48%) Honda UK Manufacturing (10%) Honda Trading Europe (5%) Employee Benefit Trust (3%) Yachiyo Kogyo of Japan (34%)	(Japanese) MD	26 August 1998

6	R-TEK Ltd. (manufacturer of door trim products for automobiles)	<i>Joint venture</i> Reydel Ltd., UK (50%) Kasai-Kogyo Co. Ltd., Japan (50%)	(Japanese) Company secretary	16 September 1998
7	Unipart Yutaka Systems Ltd. (manufacturer of exhaust systems, catalytic converters and precision pressed components)	<i>Joint venture</i> Unipart Group of Companies (UGC), UK (48%) Honda UK Manufacturing (10%) Honda Trading Europe (5%) Employee Benefit Trust (3%) Yutaka Giken of Japan (34%)	(Japanese) MD	22 October 1998

Appendix II List of Interviewees

List of interviewees at Teniki UK

Teniki UK		Participants	Interview date
(Permission for a visit per month; poor financial circumstance discouraged visits from April 1999 to June 1999)	1	(British) MD	21 August 1998 and 15 February 1999
	2	(Japanese) Senior Advisor in Sales & Marketing	17 December 1998
	3	(Japanese) Technical Advisor in Design	17 December 1998
	4	(British) Quality Engineer	17 December 1998
	5	(British) Product Engineer	17 December 1998
	6	(British) Account Manager	15 February 1999
	7	(British) Personnel and Training Manager	15 February 1999
	8	(British) Canister Supervisor	15 February 1999
	9	(British) Design Manager	16 March 1999
	10	(British) Product Engineer	16 March 1999
	11	(Japanese) Senior Advisor in Engineering	16 March 1999
	12	(Japanese) Senior Advisor in Engineering	18 January 2000
	13	(British) Team Coach in Carbon Canister	28 July 1999
<i>Work experience as an operator</i>	14	(British) Team Coach in Air Element	26-29 July 1999
	15	(British) Quality Auditor	28 July 1999
	16	(British) Personnel & Training Assistant	29 July 1999
	17	(British) Team Coach in Air Element	18 January 2000
	18	(British) Operations Manager	18 January 2000
Teniki Ltd. (interviews at the parent company in Japan)	19	(Japanese) Deputy GM, International Operations Department	7 April 2000
	20	(Japanese) Senior Manager, Development Division	7 April 2000

List of interviewees at Nissera UK

Nissera UK		Participants	Interview date
	1	(British) Account Manager	30 April 1999
<i>Work experience as an operator 14 June – 17 June 1999</i>	2	(British) Senior Team Leader in Assembly	14 June 1999
	3	(British) Senior Team Leader in Assembly	14 June 1999
<i>Worked in Cell1 and Cell2</i>	4	(British) Team Leader in Assembly (in charge of Cell1 and Cell4)	14 June 1999
	5	(British) Team Leader in Assembly (Cell2 and S1)	14 June 1999
<i>Worked in Cell3 and Cell4</i>	6	(British) Team Leader in Assembly (Cell3 and Cell7)	15 June 1999
<i>Worked in Cell5 and Cell7</i>	7	(British) Team Leader in Assembly (Cell5 and Cell8)	16 June 1999
<i>Worked in Cell8, S1 and visited PCB</i>	8	(British) Team Leader in PCB	17 June 1999
	9	(British) PCB and Moulding Manager	17 June 1999
	10	(British) Purchasing and Production Control Manager	30 July 1999
	11	(British) Production Manager	30 July 1999
	12	(British) Group Leader in Customer Quality	30 July 1999
	13	(British) Management Accounts Manager	30 July 1999
	14	(Japanese) Quality Director	13 September 1999
Nissera Ltd. (interviews at the parent company in Japan)	15	(Japanese) Deputy Manager, General Affairs Department	12 April 2000
	16	(Japanese) Manager in Production Department 1	13 April 2000
	17	(Japanese) Manager in Quality Assurance Supervision Department	13 April 2000
	18	(Japanese) Manager in Corporate Finance Department	14 April 2000
	19	(Japanese) Manager in Electronics Engineering Department 1	14 April 2000
	20	(Japanese) Manager in Corporate Planning and Control Department	14 April 2000

List of interviewees at Rover Group and Honda Motor Co.

R8/YY, Rover 200/Honda Concerto project		Positions of the participants at the time of the R8/YY project (principal engineers are coded for anonymity)	Interview date
Rover Group	1	(British) Ex-director of Honda Collaboration	21 January 1999
	2	(British) Senior Purchasing Manager of Rover Group Projects	16 February 1999
	3	(British) Principal Electrical Engineer A	24 February 1999
	4	(British) Chief Predevelopment Electrical Engineer	11 March 1999
	5	(British) Chief Advanced Power Train Engineer	2 April 1999
	6	(British) Principal Electrical Engineer B	9 April 1999
	7	(British) Principal Electrical Engineer C	13 April 1999
	8	(British) General Manager of Honda Collaboration	15 April 1999
	9	(British) Electrical Team Leader D	16 April and 21 May 1999
	10	(British) Logistics Operations Manager	23 April 1999
	11	(British) Electrical Group Leader E	7 May 1999
	12	(British) Principal Electrical Engineer F	7 May and 21 June 1999
	13	(British) Principal Systems Engineer on Rover 800 G	10 May 1999
	14	(British) Principal Electrical Engineer H	12 May 1999
	15	(British) Chief Designer	14 May 1999
	16	(British) Principal Electrical Engineer I	24 May and 21 June 1999
	17	(British) Team Leader J	27 May 1999
	18	(British) Principal Electrical Engineer K	2 June 1999
	19	(British) Design Director	22 June 1999
	20	(British) Principal Mechanical Engineer L	22 June 1999
	21	(British) Design and Development Engineer	23 June 1999

	22	(British) Project Engineer on Central Components		21 July 1999
	23	(British) Senior Manager in Manufacturing Integration (current)		25 August, 9 September and 6 October 1999
Honda Motor Co. Ltd. (Interviews in the UK)	24	(Japanese) Ex-director of Rover Collaboration at Honda Motor Europe (HME)		17 April 1999 (by e-mail) and 30 March 2000 (in Japan)
	25	(Japanese) Manager at Rover Liaison Office of Honda Motor Europe		29 April 1999
	26	(British) Purchasing Divisional Manager, Honda UK Manufacturing (HUM)		22 September 1999
(Interviews in Japan)	27	(Japanese) Executive VP of Honda R&D Europe		29 March 2000
	28	(Japanese) Principal Engineer (currently Assistant Chief Engineer)	HA	29 March 2000
	29	(Japanese) Principal Engineer (currently Assistant Chief Engineer)	HB	29 March 2000
	30	(Japanese) Principal Engineer (currently Assistant Chief Engineer)	HC	29 March 2000
	31	(Japanese) Project member on the XX project (currently Production Planning Manager)		3 and 4 April 2000
	32	(Japanese) Project Manager (currently MD of Honda Foundation)		5 April 2000
	33	(Japanese) Project Leader (currently MD of Car Development Department at Nissera Ltd.)		13 April 2000

Appendix III The Interview Protocol

The research participants were familiar with the research objectives and the background of the researcher prior to the scheduled meetings. General information on the name, position and roles and responsibilities of the participants, interview dates and times, as well as the name of the organisation, were recorded at each sampled firm.

Name of the organisation:
Name of the participant:
Position of the participant ¹²⁶ :
Date of the interview:
Start and end time of the interview:
Nature of the job (i.e. roles and responsibilities):

List of interview questions

I. Institutional level

Institutional level questions were directed to local development agencies such as the Economic Development and Tourism Units and the District and Borough Councils. Secondary sources of information such as newspaper articles were also used. Questions (which were in general the same for all three sampled firms) centred on the following issues:

¹²⁶ In the case of Rover, participant’s current position as well as that at the time of the R8/YY project was asked.

1. Age and skill level of the labourforce
2. Employment by sector as an indicator of tradition of manufacturing
3. Level of unemployment in the area
4. Number of overseas companies in the region
5. Government initiative for (inward) investment
6. Level of industrial dispute

Questions directed to Teniki UK and Nissera UK

II. Organisational Level

1. What was the organisation like before the acquisition by Teniki? (only applicable to Teniki UK)
2. With what purpose was the subsidiary established?
3. How is the subsidiary financed?
4. Would you say that you have 'Japanised'?
 - 4.1 What is the role of technology in this process?
5. How different is managing a brownfield site from that of a greenfield site?
6. Have there been structural changes?
7. What is the role of the parent company in the subsidiary firm's operations?
 - 7.1 What is the nature of the relationship with the parent company?
 - 7.2 How successful is it?
8. What kind of cultural and managerial differences between the subsidiary and the parent firm do you perceive?
 - 8.1 How are these managed?

9. Which practices* of the parent firm are transferred* to the subsidiary?
10. Do you feel that the working relationship between the parent company and subsidiary firm could be better?
 - 10.1 What could be done differently to improve it?
11. What is the parent company learning from its subsidiary?
 - 11.1 What mechanisms are there for sharing ideas?

III. Group Level

12. How are parent company's practices, such as continuous improvement activities, transferred to the subsidiary firm?
 - 12.1 Is there an emphasis on documentation?
13. How did the Japanese train senior managers?
14. What are the barriers preventing the adoption of Japanese practices at the subsidiary firm?
15. Is quality assessment effectively implemented at the subsidiary firm?
16. Is there a different level of resistance to different types of transferred practices?
17. Which factors* make it easier for the employees at the subsidiary firm to accept* the parent company's practices?
18. Which practices could not be successfully implemented at the subsidiary firm?
 - 18.1 Why?
19. What implications has the introduction of Japanese practices had for the subsidiary firm's performance?

* The terms ‘transfer’, ‘practices’, ‘factors’ and ‘accept’ were used instead of ‘diffusion’, ‘work systems’, ‘characteristics’ and ‘internalise’ in the interviews for ease of communication with practitioners. Effort was made to avoid the use of academic terms.

Questions directed to the Rover Group and Honda Motor Co. Ltd.

II. Organisational Level

1. What was the nature of your relationship with Honda [Rover]?
 - 1.1 How successful was it?
 - 1.2 Why?
2. Was there a clear division of responsibility between Honda and Rover?
3. Which Honda practices were transferred to Rover in general?
4. How did the local practice/custom limit the extent to which Honda ideas were accepted at Rover in general?
 - 4.1 Was there a different level of resistance to different types of practices?
5. Which practices could not be successfully implemented at Rover?
 - 5.1 Why?
6. Which practices disappeared over time at Rover?
 - 6.1 Why?
7. What kind of cultural and managerial differences between Rover and Honda did you perceive?
 - 7.1 How were these managed?
8. What did Honda learn from Rover? What did Rover learn from Honda?

III. Group Level

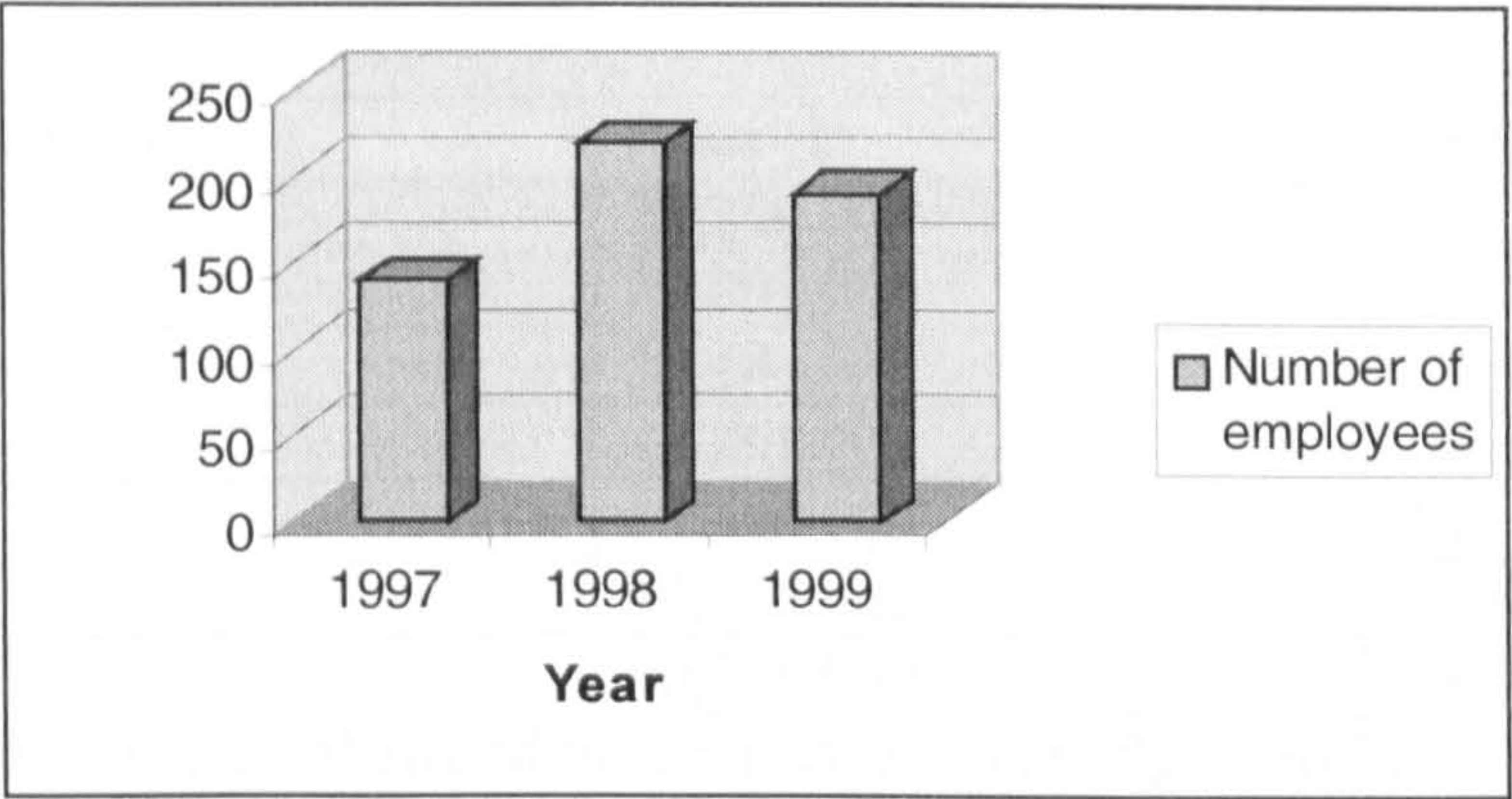
- 9. Which Honda practices were transferred specifically to the collaborative project you were involved in?**
 - 9.1 Did you make use of these practices in the joint project?**
 - 9.2 How were these practices transferred?**
 - 9.3 Was there an emphasis on documentation?**
- 10. Which factors helped in the transfer process?**
- 11. Which factors made it difficult to transfer practices?**
- 12. How did the local practice/custom limit the extent to which Honda ideas were accepted at Rover, specifically at the joint project level?**
 - 12.1 Was there a different level of resistance to different types of practices?**
- 13. In your joint development of the Rover 200/Honda Concerto, what mechanisms were there for sharing ideas?**
- 14. Would currently available knowledge databases on the intranet have contributed to effective working relations if they were available at the time of the Rover 200/Honda Concerto project?**
- 15. Do you feel that the working relationship between Rover and Honda engineers could have been better on the Rover 200/Honda Concerto project?**
 - 15.1 What could have been done differently to improve it?**
- 16. What did you learn from Rover at a project and an individual level?**
 - 16.1 How would you implement what you learnt on the Rover 200/Honda Concerto project on a joint project of a similar nature with another British [Japanese] firm?**

Appendix IV Conference and Seminar Papers Presented to Scholars on the Theoretical Framework and Preliminary Findings of the Cases

Date	Conference	Title of the paper	Venue
September 16-19, 2000	ESRI Thematic Workshop on Forms of Transnational Governance and Paths of Economic Development (granted free accommodation and travel grant up to DKK 4000)	Institutional Limits to Implementation of Work Systems: A Comparative Study of Two Japanese MNCs in the UK	Lisbon, Portugal
July 2-4, 2000	16 th EGOS (European Group for Organisation Studies) Colloquium (granted scholarship in the amount of FIM 2000)	The Role of Institutional Elements in 'Economic' Organisations: A Comparative Study of Two Japanese MNCs in the UK	Helsinki School of Economics and Business Administration, Helsinki, Finland
June 11-16, 2000	The 3 rd European Project Management Conference (chaired the Cross-Cultural Issues stream)	Barriers to Embedded Knowledge Transfer in an Anglo-Japanese Engineering Project	Project Management Institute (PMI), Jerusalem, Israel
April 10, 2000	Visit to JAIST (received a grant of ¥50,000)	Barriers to Embedded Knowledge Transfer in an Anglo-Japanese Engineering Project	School of Knowledge Science, Japan Advanced Institute of Science and Technology (JAIST), Ishikawa, Japan
September 24-28, 1999	ESRI (European Summer Research Institutes) Ph.D. Summer School on Comparative Study of Economic	Institutionalising the Economic Organisation	Institute of Organisation and Industrial Sociology, Copenhagen Business

	Organisation (granted ESRI scholarship up to ECU 700 and travel grant up to ECU 250)		School, Copenhagen, Denmark
September 1-3, 1999	British Academy of Management Conference (BAM '99)	Institutional Sociological View of Knowledge: Its Transfer from a Japanese Parent to a UK Child Company	Manchester Metropolitan University, Manchester, U.K.
July 4-6, 1999	15 th EGOS Colloquium	Different Epistemological Positions of Knowledge: Advocacy of the Institutional Sociological View	University of Warwick, Coventry, U.K.
May 5, 1999	IROB (Industrial Relations and Organisational Behaviour) Seminar Series	Beyond an Economic View of Knowledge	University of Warwick, Coventry, U.K.
November 16, 1998	BPRC Focus Group on Knowledge Management and Networking (by invitation)	Knowledge Management in Inter- organisational Alliances	University of Warwick, Coventry, U.K.
July 9-11, 1998	14 th EGOS Colloquium	Inter- organisational Alliances— Transition Zone?	Maastricht University, Maastricht, The Netherlands.

Appendix V Change in Employment at Teniki UK

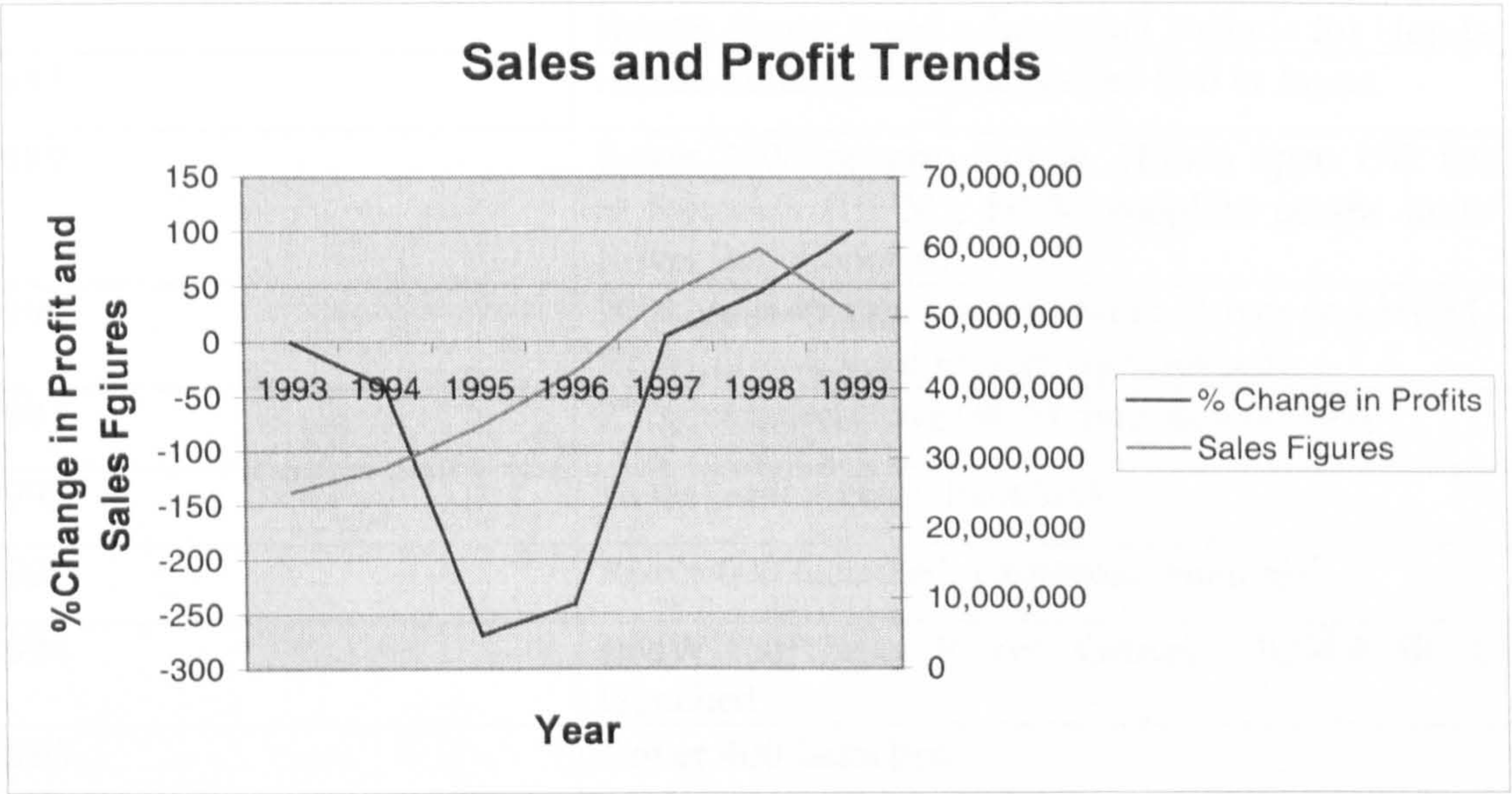


Source: Teniki UK Ltd.

Appendix VI Sales and Profit Trends between 1993 and 1999

Fiscal Year	Sales (£)	Profits (%)
1993	25,259,000	-0.2
1994	28,891,000	-41.7
1995	34,487,000	-268.3
1996	42,251,000	-241.3
1997	52,984,000	5.1
1998	59,936,000	45.4
1999	50,750,000	100.0

N.B. Profits are calculated in comparison to the figure in 1999



Source: General Affairs Department, Nissera

Appendix VII Key Events in the Rover-Honda Relationship

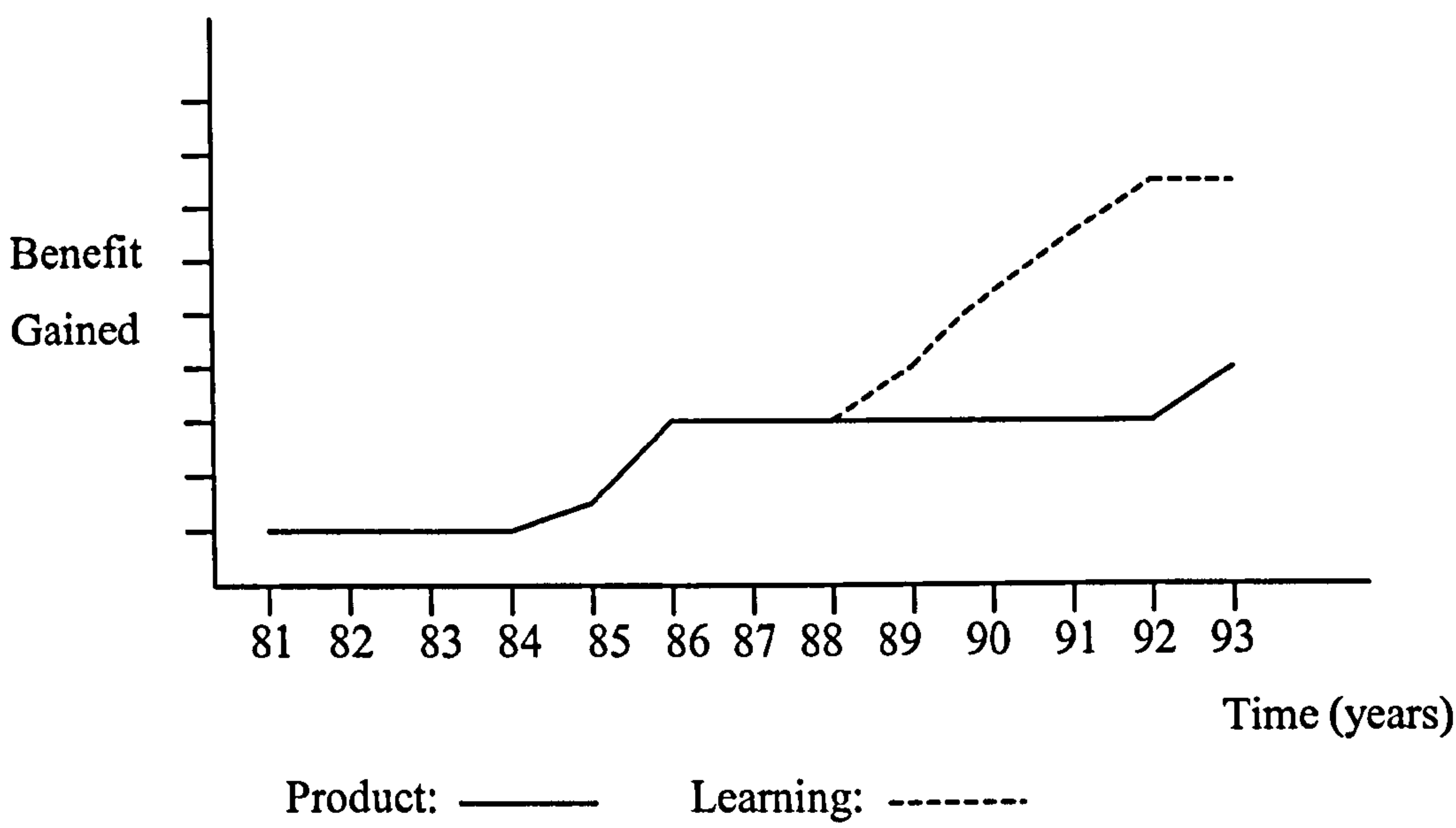
Date	Event
September 1978	First contact in Tokyo
October 1978	Working meeting in San Francisco
April 1979	First joint press release
December 1979	Triumph Acclaim agreement signed
1981	Triumph Acclaim launched
1982	Rover 800/ Honda Legend project commenced
1984	Rover 200 launched (replaced Triumph Acclaim)
1985	R8/YY Project commenced (2 nd generation Rover 200/400, Honda Concerto)
1986	Rover 800 launch, Rover build subcontract Legend for Honda, Rover build subcontract Ballade for Honda
1987	Honda build subcontract Rover 800 in Japan
1989	Rover 200/Concerto launch, Honda open UK factory at Swindon (HUM), HUM supplies power units for Rover 200/Concerto
1990	20% cross shareholding between Rover and HUM, Rover 600/Accord project commenced
1991	2 nd generation Rover 400/Civic commenced
1992	HUM-built Accord launched
1993	Rover 600 launched, Crossroad launched
1994	BMW purchase Rover Group, HUM-built Civic launched
1995	Rover 400 launched

Source: Liaison Office, Rover Group

Appendix VIII The Benefit Scale

The benefit scale, in which the vertical axis indicates Rover-perceived benefit gained from the relationship with Honda over time.

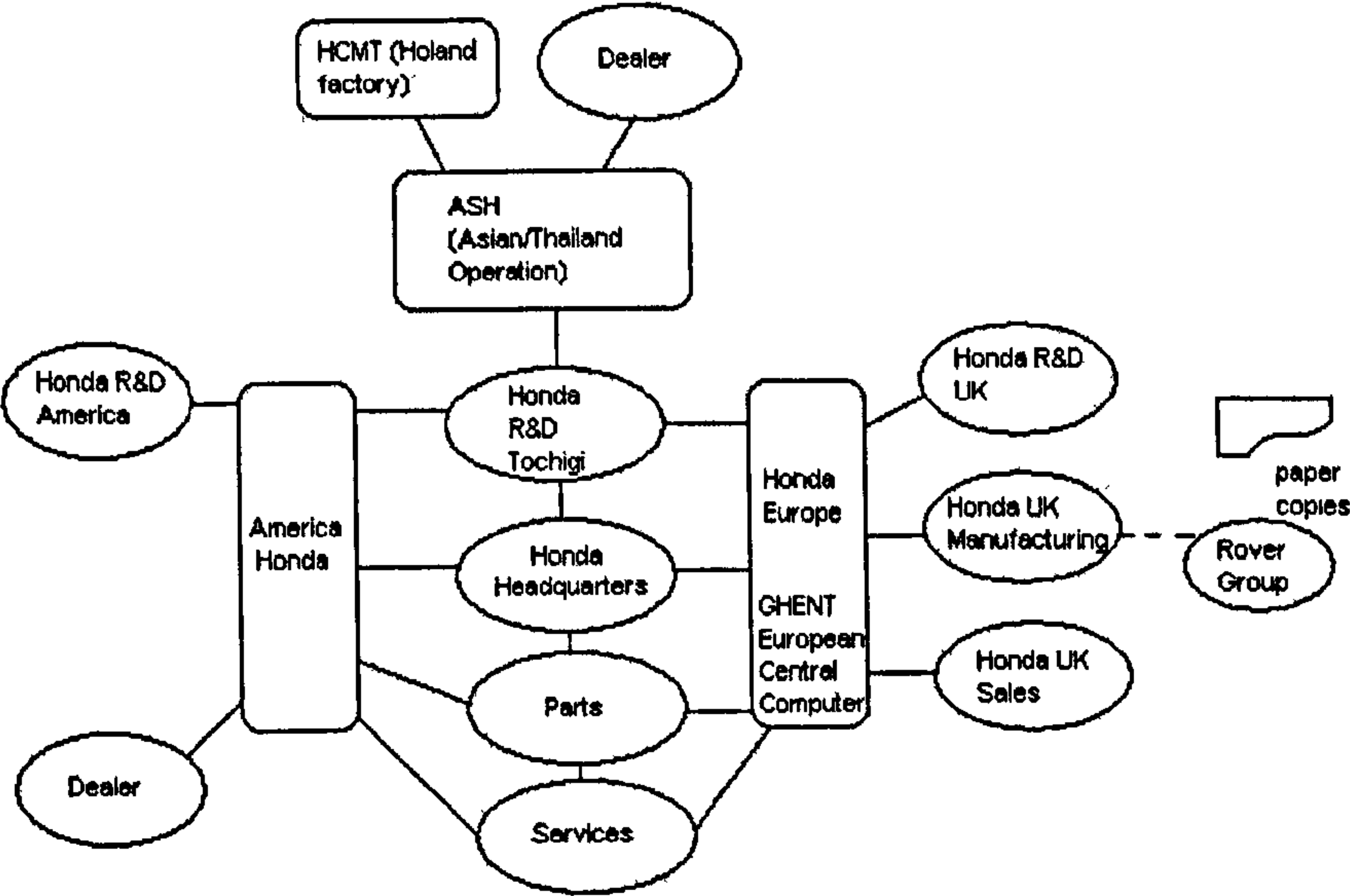
In the early years, from 1981 to 1988, the benefit was in excess of incremental product. From 1988 onwards, in addition to incremental product, Rover was claimed to have benefited by ‘learning from Honda’.



Source: Rover Group, Liaison Office

Appendix IX Honda Motor Company's Communication Network

A data link is not available in Honda's 50-50 collaborations. Rather, there is heavy emphasis on people transfer.



Source: Interview with Japanese project member on the XX at Honda Motor Co. Ltd. (3 April 2000)